

# Non-Directional Beacon (NDB) Photo Gallery

## By Stephen P. McGreevy - N6NKS

**Updated 07 March 2019: Many print-images re-scanned and vastly improved; All images now auto-load inline; more NDBs from the 1980s and also four MWBCB transmitter-site-photos have been added (former 1510 KTIM-San Rafael, CA; former 1610 TIS Point Reyes National Seashore-North Beach/Cuyamaca SP Calif.); Oregon and California OTH-b HF radar installations - 1990; and more...**

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*The former 25-watt, 375 kHz "EMC" - Winnemucca, Nevada (off-air since 2002). Photo by Stephen P. McGreevy, June 1987. Winnemucca Mountain is in the distant background.*

Non-directional beacon (NDB) photography: The following is a gallery of non-directional beacon (NDB) photos taken during several road-trips between May 1984 and December 2008, mainly of NDB's in the West, Intermountain regions, and High Plains/Prarie regions of Canada and the United States. There are also photos of other longwave installations, too. Probably over 2/3rds of the U.S. NDB's pictured here are now off-the-air, so these photos can be considered historical, especially for DXers who have logged them in the past when NDB-band-density was vastly-higher, pre-GPS implementation.

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## Very useful NDB identification and logging websites:

[The NDB List Website](#)

[Martin Francis - Extremely Detailed NDB DX Website \(including NDB Log Database by region and NDB identification database by region\)](#)

[Martin Francis RNA-sub-section of his database \(RXX\) new updated ver.](#)

[William Hepburn's NDB Listing](#)

[By Mark \(AF6IM\) - Great article about maritime Navigating in the 60's and 70s with surplus aviation nav. gear](#)

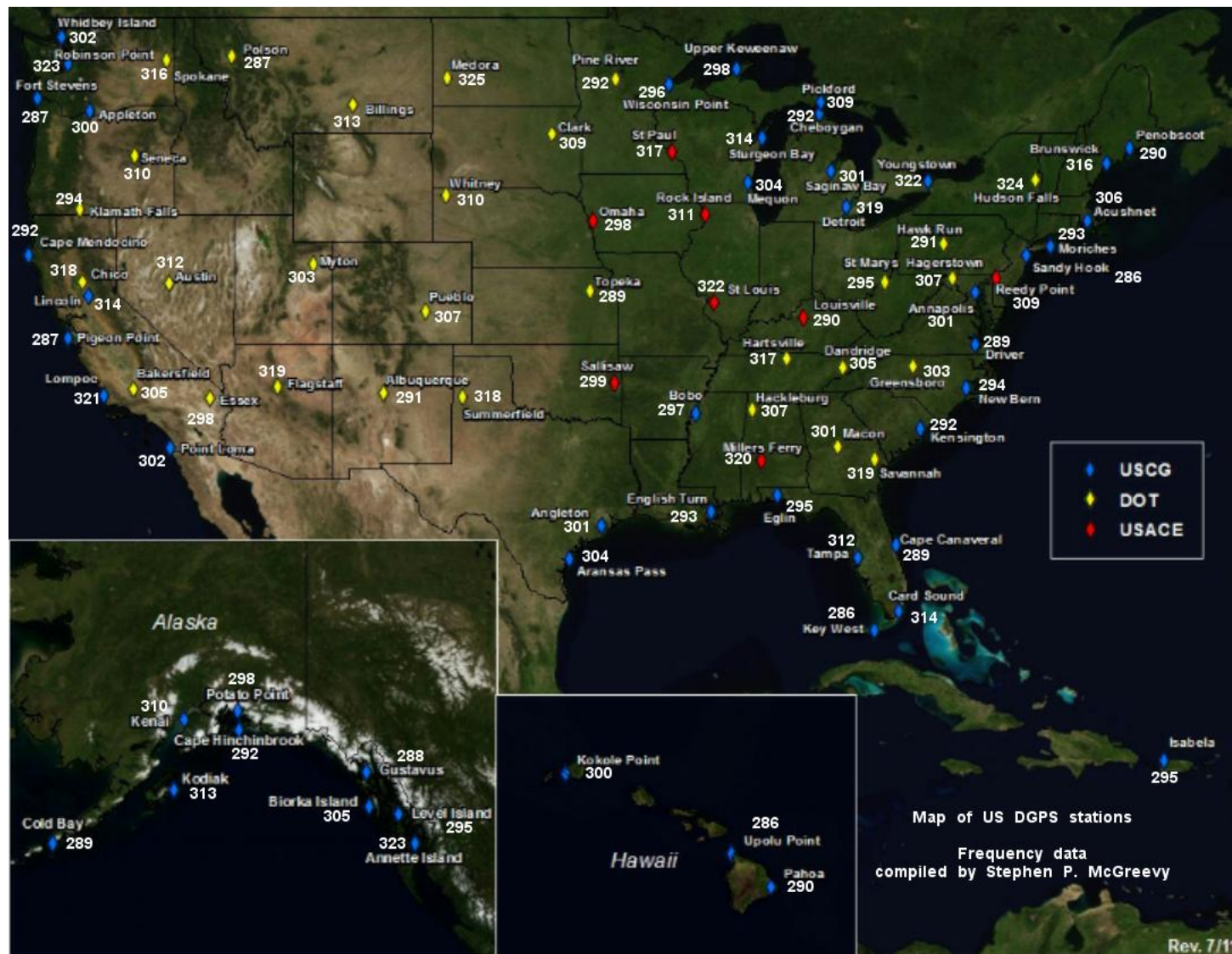
[November 2010 MW DXpedition to Oahu, Hawaii - also has my Longwave Recordings Winter 2010/11](#)

[Robert Connelley's Northern Ireland NDB DX website \(GI7IVX\)](#)

[G4UCJ's Excellent Beacon Website \(with logs\)](#)

[Great article about NDB navigation techniques](#)

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Map of US DGPS data-stations by frequency in kHz and location (generally uninteresting FSK at 100 or 200 baud unless you're into decoding these things, but they are/were useful for signal-propagation observations). Many/most are off-air late 2017 now (all but the BLUE-marked USCG DGPS beacons are off-air in 2018, now freeing up many NDBs into audibility again! Example - the lovely 305 RO-NM/ONO-OR Mixture is in the clear now - Bakersfield's 305 kHz DGPS for the (Caltrans)(CA-DOT) is off-air now, as is Essex 298 photo way-below.)

[Auroral Chorus Home Page](#)

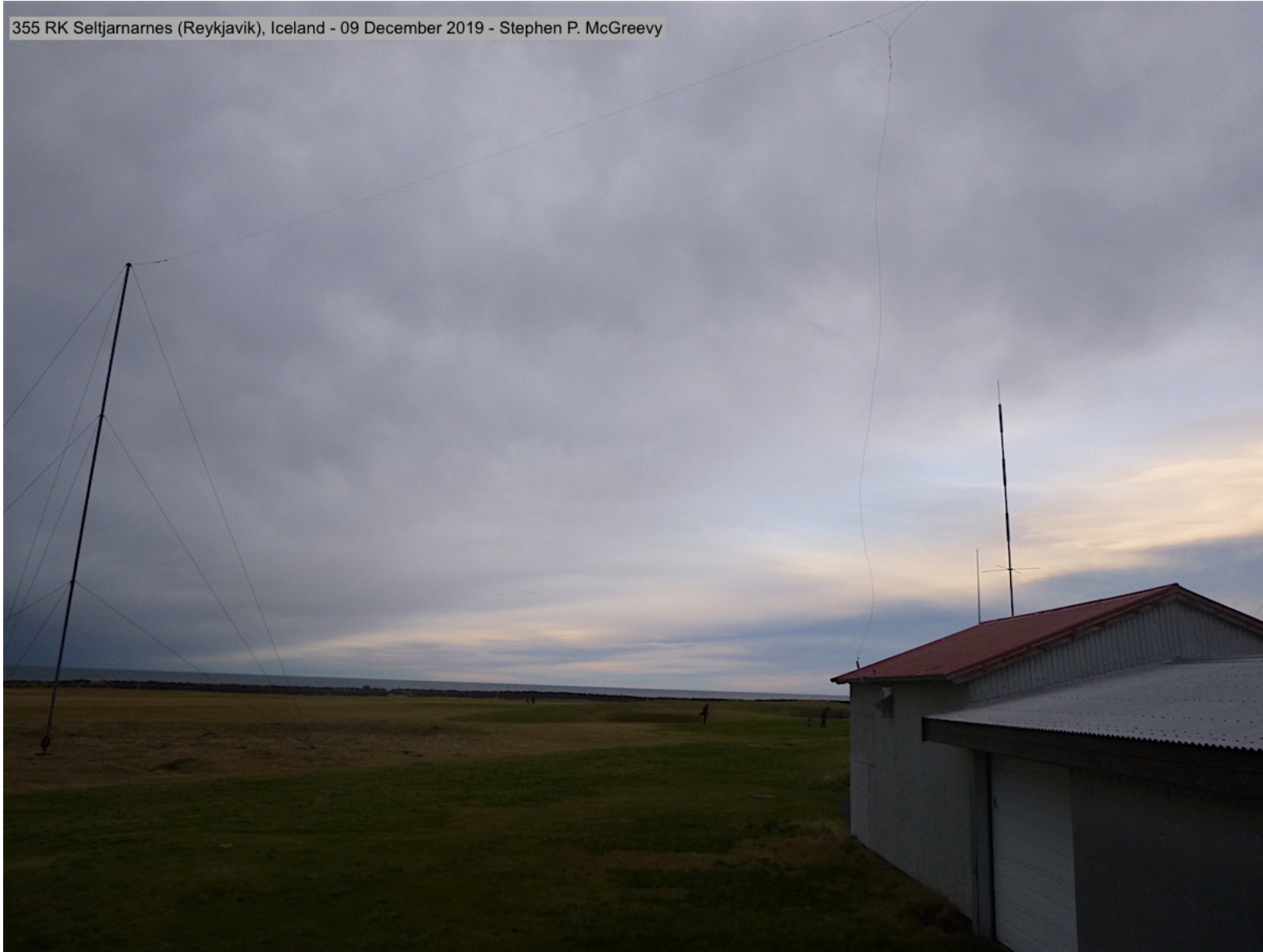
## Iceland:



355 RK Reykjavik, Iceland - 09 Dec. 2016 - SP McGreevy - N6NKS



355 RK Seltjarnarnes (Reykjavik), Iceland - 09 December 2019 - Stephen P. McGreevy





355 "RK" Seltjarnarnes (Reykjavik), Iceland - 10 Dec. 2016 - Stephen P. McGreevy - N6NKS  
(former-tall mast with elevated-counterpoise in the right)

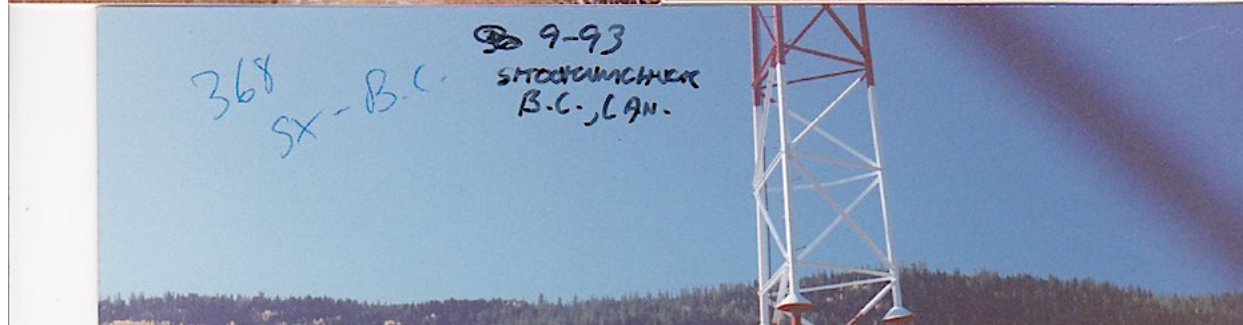


**355 RK "Reykjavik" (Seltjarnarnes) Iceland - flat-top—and former vertical lattice mast - 10 December 2016 - SPMcGreevy**

355 RK Reykjavik, Iceland is located at a golf course on the tip of the Seltjarnarnes Peninsula in Seltjarnarnes, Iceland, a suburb of Reykjavik to the west of the downtown CBD. This beacon employs a two-guy-cable-supported "T" antenna (Marconi type) consisting of a single cable up-lead and flat-top section. Photo taken by Stephen P. McGreevy 09 December 2016 on a long walk and during a 12-day natural ELF-VLF research trip and a LW/MW DXpedition, also. RK is 1020 Hz ident-tone USB only (at the time of my visit), with a USA-style ident (no DAID). I was staying in a private apt. 10 km from this beacon, and on this fine, mild day, I walked to the Seltjarnarnes Nature Preserve and golf course in Seltjarnarnes, Iceland. As I loved the long nights replete with full-moonlight and loads of pretty Christmas Lights, and I saw three nights of level 2-3 aurora... as such, I was extremely pleased and hugely enjoyed my visit and consulting-time there. The first overseas NDB I have visited. Initially, I heard it on an ELF rx. as it was nearby my listening spot. Curious, the next day I walked to this beacon. Next to it to the east about 100-meters away is a vertical, self-supported lattice-mast near-identical to 320 YQF Alberta, Canada and 254 SPK Nevada but also included an elevated-counterpoise very similar to 320 HTN (pics below, and the former RK-mast is very visible on Google Earth/Apple Maps). That was the former NDB for RYK (airport), now this 355 kHz 'RK' unit and antenna seen at the golf course. Parking is just 100m away, and this is an easy NDB to visit and is in a lovely coastal peninsular location!



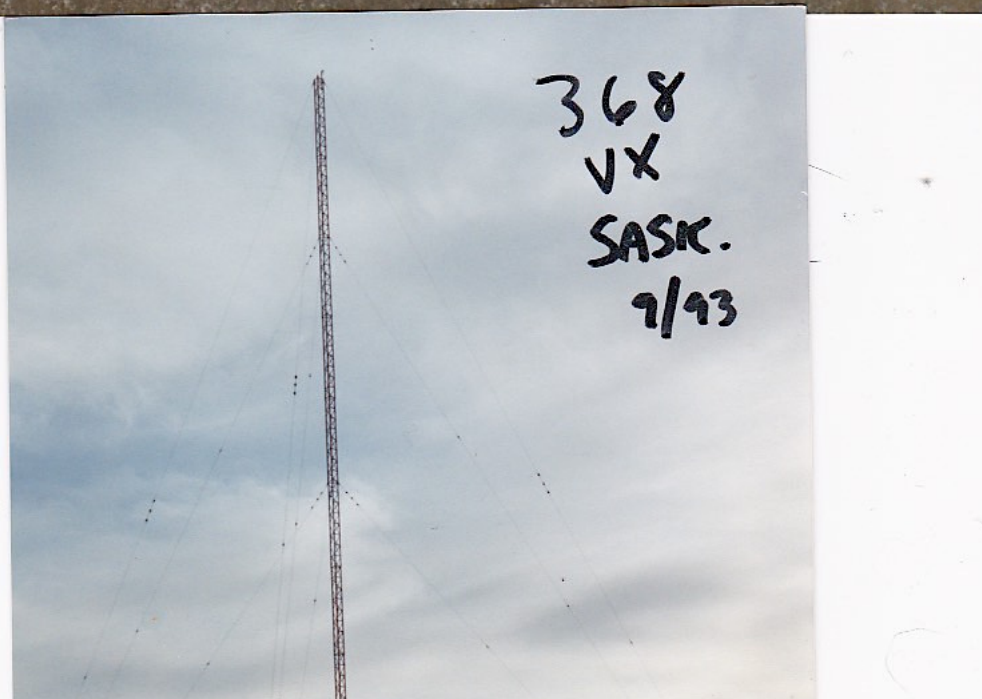
**Canada:**







368 SX Cranbrook (Skookumchuck), British Columbia. Tall vertical mast antenna. Beautiful Autumn foliage next to the beacon, with a bit of the Canadian Rocky Mountains visible in the background. Gail and I spent many hours trying to find this beacon! High-power and located well away from the main Highway 93. A strong signal in California but often battling it out with stronger ZP Sandspit, B.C. - (both were 1020 Hz USB pitch modulation when I wrote this in 1999, now SX and ZP are 400 Hz pitch modulation as of 12/05 - monitor 368.4 kHz). S. McGreevy, photo taken September 1993. 368\_sx.jpg, 62,466 bytes.



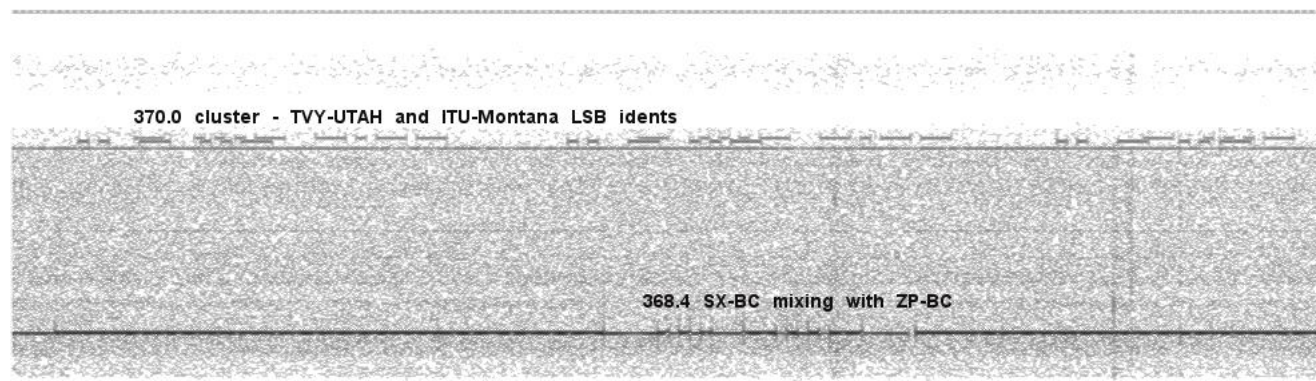


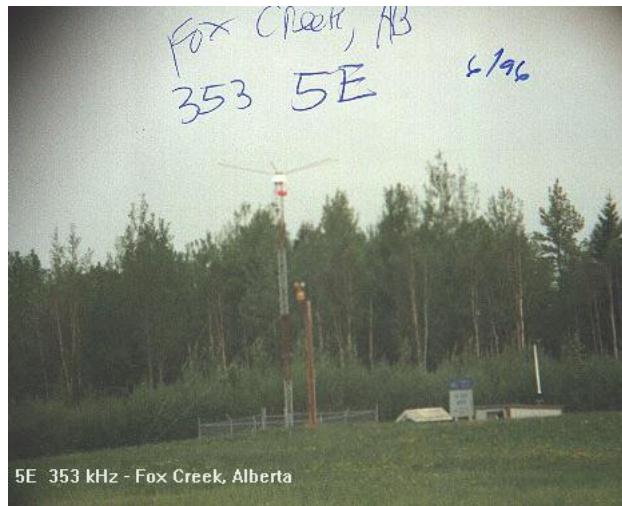
(mimicking a small mediumwave BCB station operating around 1600 kHz). Photographed near sunset as we drove right by it, I didn't immediately recognize it as an NDB, and we kept on driving for a few km before I thought to check the longwave portable to see if was an NDB - sure enough, it was (!), so we drove back to take pictures. VX is located far from any airport, etc., in a field with nothing else around. While we visited this beacon, the skies were full of migrating flocks of Canada Geese! I've heard this one in here California (400 Hz pitch USB modulation - monitor 368.4 kHz narrowband CW/SSB mode). McGreevy, September 1993. 368\_vx.jpg 32,727 bytes.



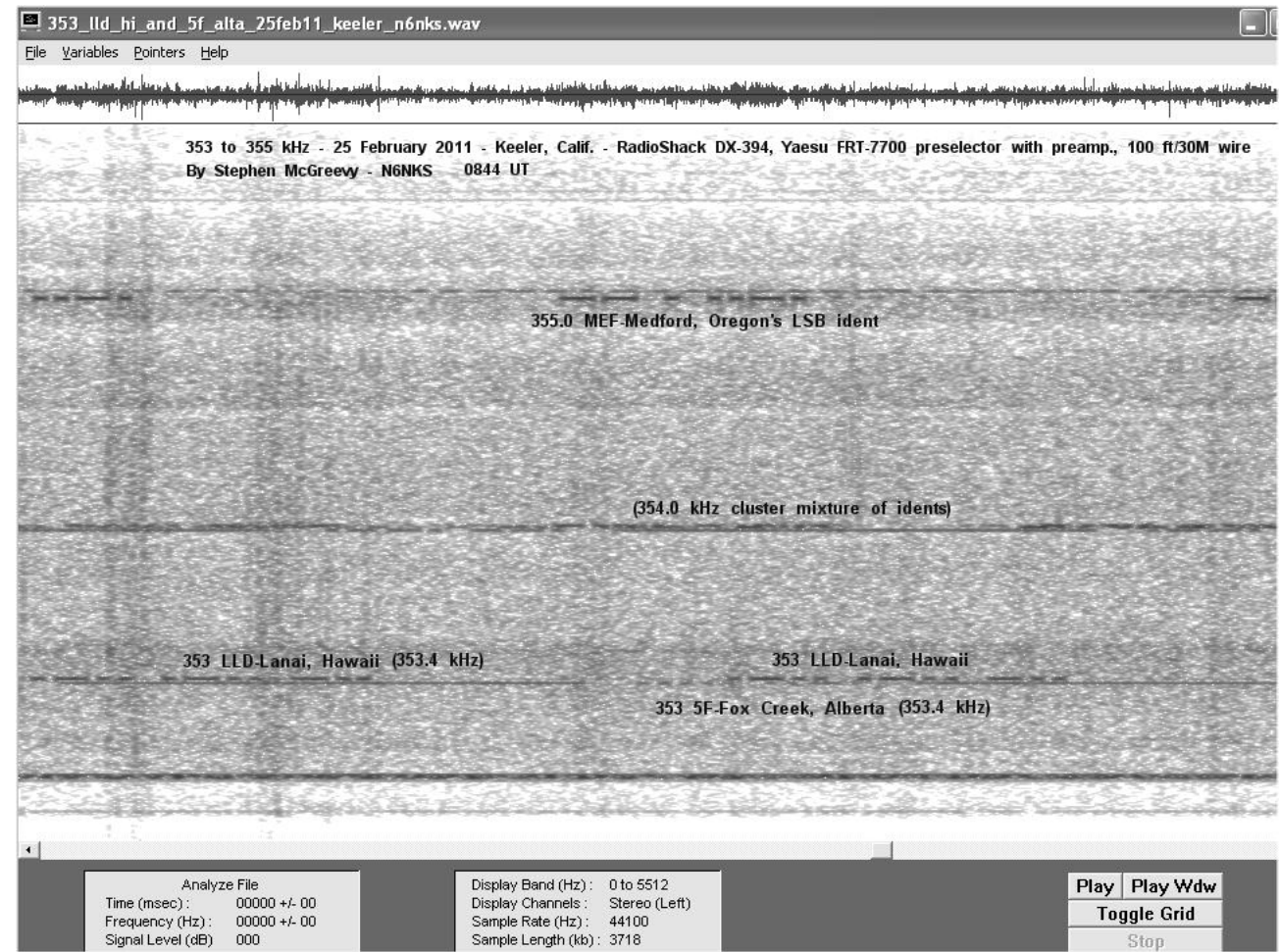
**368 kHz USB-mode, TS480, Yaesu FRT-7700 preselector/preamp, loop oriented north/south  
by Stephen P. McGreevy 11 April11 at 1216 UT - Keeler, California**

68 VX, Dafoe, Saskatchewan. Medium-height, guyed antenna mast





353 - 5E (later "5F"), Fox Creek, Alberta. Just another example of a typical low-power (usually 25-watt) Canadian number/letter ident beacon usually found at small airports (see 328 5J photo just below). I photographed this one from afar, through binoculars, from the entry road to the airport, being on my way south on Hwy 37 with the goal of Waterton Park in southern Alberta at the end of the day (and it was threatening to rain). S. McGreevy, June 1996. 5E\_353.jpg 28,855 bytes. (SINCE THIS PHOTO WAS TAKEN 5E CHANGED IDENTIS TO "5F")





328 - 5J, Coronation, Alberta. A good close-up of another small, privately-owned number/letter beacon. Metal lattice mast and self-supporting 6-spoke umbrella top-hat with wire skirt and two red marker lights. Occasionally heard in California, weakly, when conditions are good (monitor 328.4 kHz in narrowband CW/SSB mode). S. McGreevy, September 1993. 5J\_328.jpg 36,049 bytes.

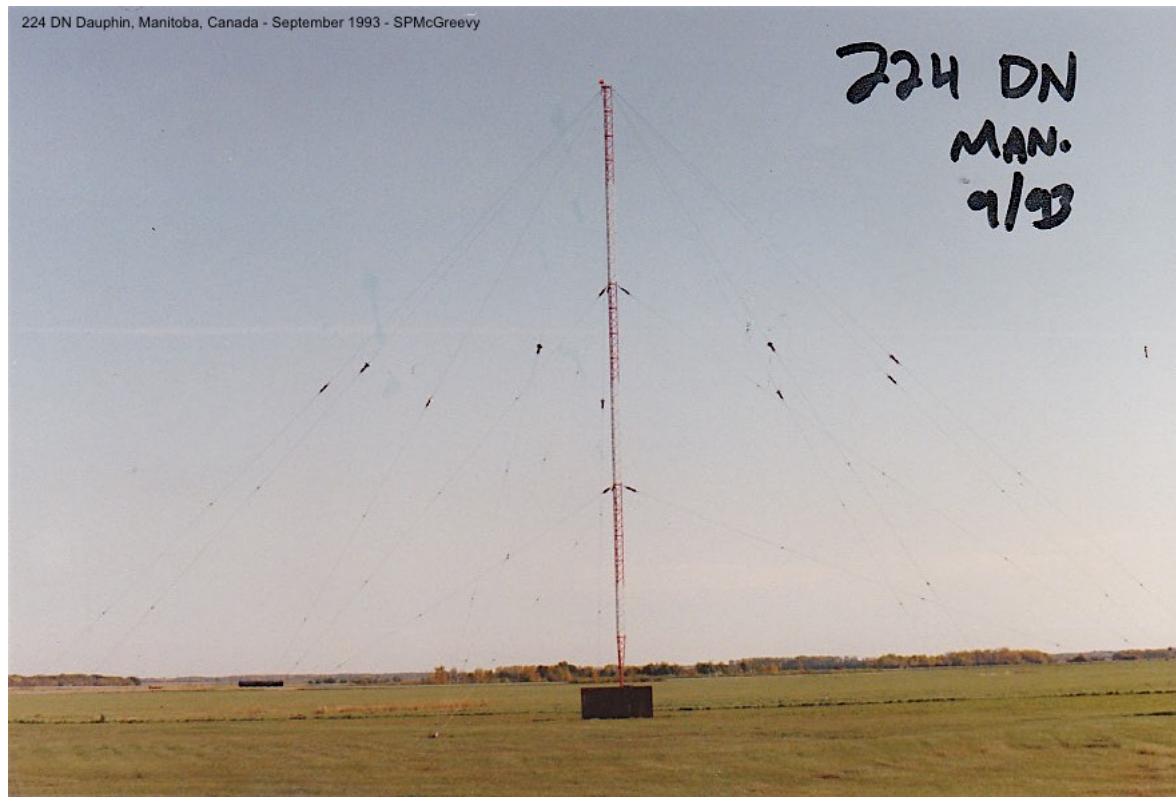




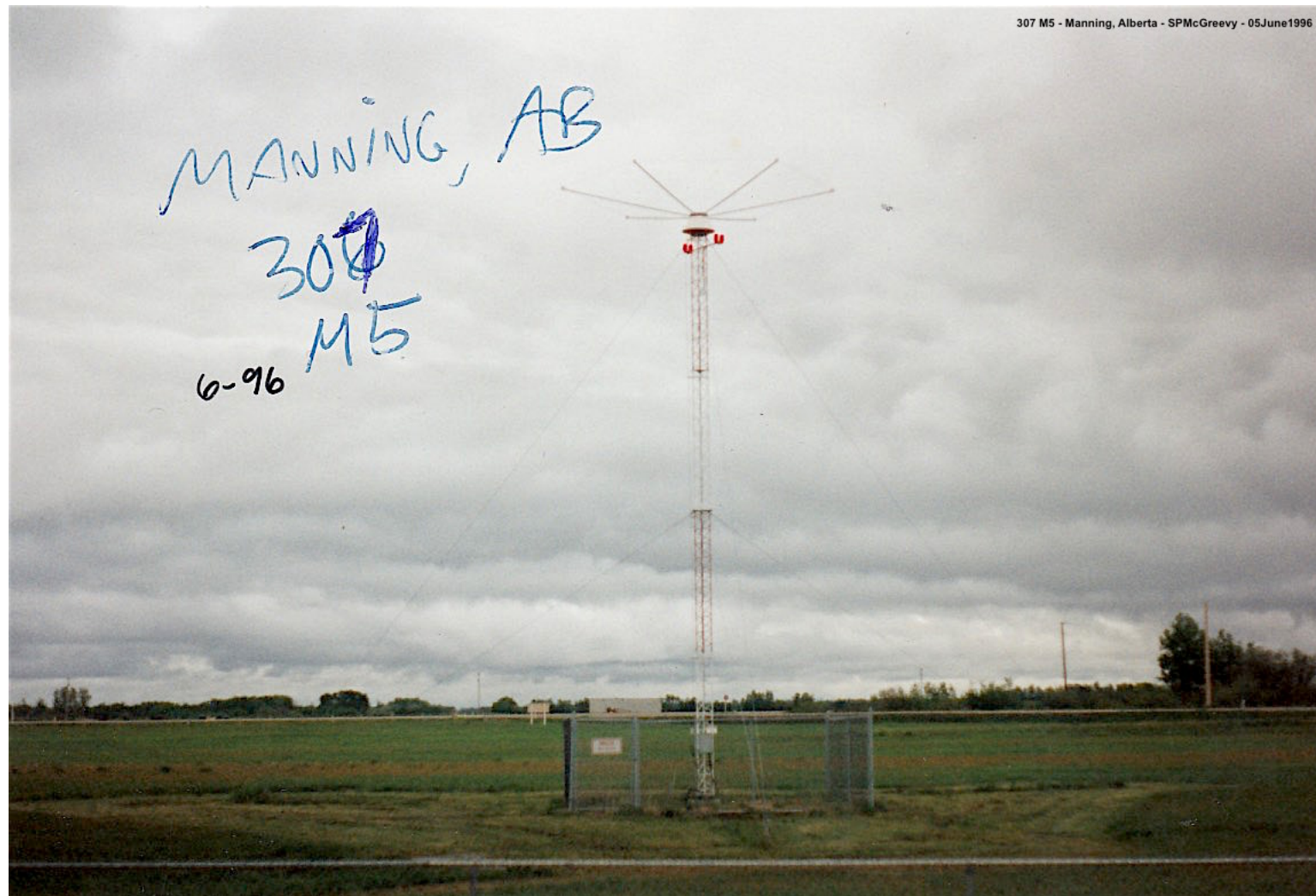
by to visit on the Sept. 1993 trip.

- 286 8G Stettler, Alberta - September 1993 - Another letter/number beacon we stopped

224 DN Dauphin, Manitoba, Canada - September 1993 - SPMcGreevy



224 DN - Dauphin, Manitoba. This beacon is a fine example of a Canadian NDB employing a medium-height lattice antenna mast and drooping wire-capacitance tophat/umbrella (a mini-version of former Omega-D North Dakota and many Loran-C installations!). This (400 Hz USB ident modulation pitch) beacon was spied right along the Highway south of Dauphin - we were not DFing it. I've heard this one in California regularly when conditions to Canada are good (monitor 224.4 kHz in narrowband CW/SSB mode). S. McGreevy, September 1993. DN\_224.jpg 32,757 bytes.



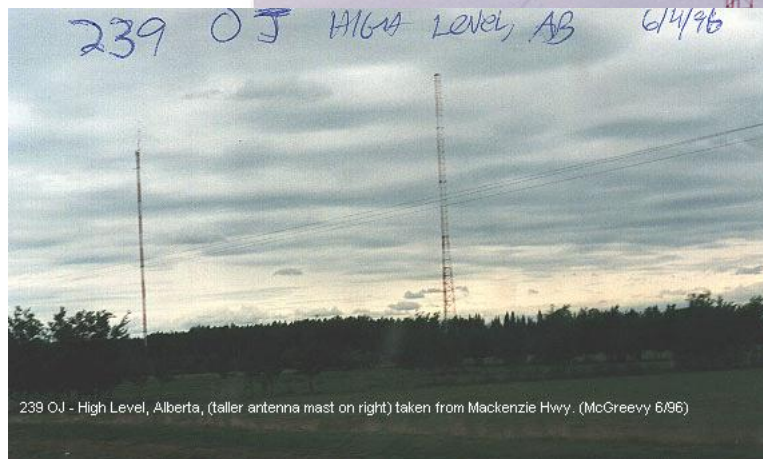
307 M5 - Manning, Alberta. Very similar installation to 5E and 5J above. I saw this one at the airport right next to the Mackenzie Highway as I was traveling southward, and turned off the highway into the airport to take this photo in the rain. I didn't know what this beacon was until I checked my Sony portable. Seemed a weak signal even close. S. McGreevy, June 1996, driving southward during my Solar-Minimum Natural VLF Radio recording expedition (featured recordings are on my 2000 album: 'Auroral Chorus II'). (Initially, I thought this beacon was 306 kHz via my ICF-7600D as I had no beacon listing of it with me on the trip.). Heard since in Calif. by myself and others.





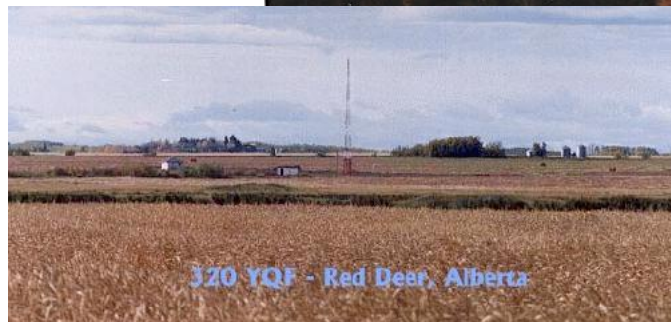


Alberta. Gail and I drove right to the RMH airport looking for 411 RM (which was apparently off the air) and saw this little beacon similar to all the other small, number-letter beacon installations. I had to check the radio to ID it. S. McGreevy, September 1993.



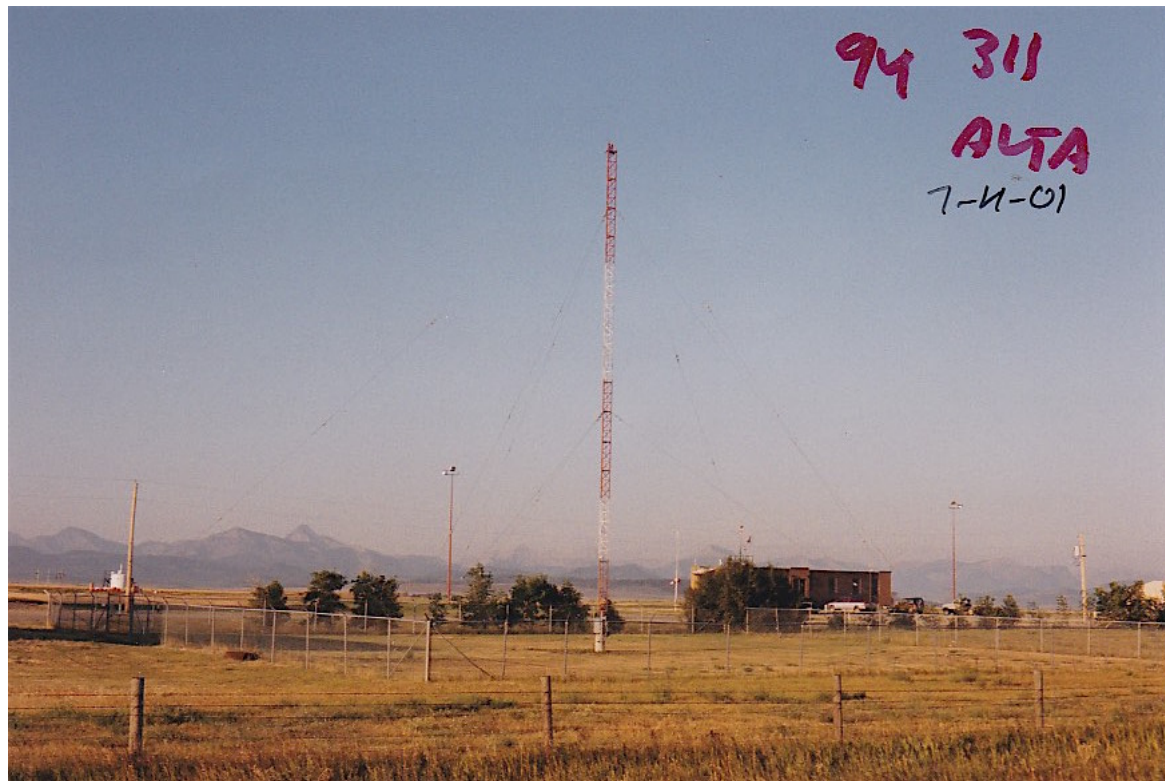
239 OJ - High Level, Alberta, (taller antenna mast on right) taken from Mackenzie Hwy. (McGreevy 6/96)

(former - possibly off-air early 2018?) 239 OJ, High level, Alberta. This photo was taken while (90 km/h) in-motion southbound on the Mackenzie Highway returning from the Northwest Territories. I had previously spied this beacon while driving northward to the NWT, so I was prepared to take this quick (tilted) shot as I passed by it again. The beacon antenna is the taller mast on the right (telephone tower is the left one). I wish I had taken the time to visit this site. Weak to occasionally fair 2-hop signal in the S.F. Bay Area and eastern California, it is a quite-strong 1-hop signal (400 Hz USB ident modulation) in southern (Lakeview) Oregon where I also resided and monitored it (on 239.4 kHz narrowband CW/SSB mode) for good northward conditions. S. McGreevy, June 1996. OJ\_239.jpg, 31,810 bytes.

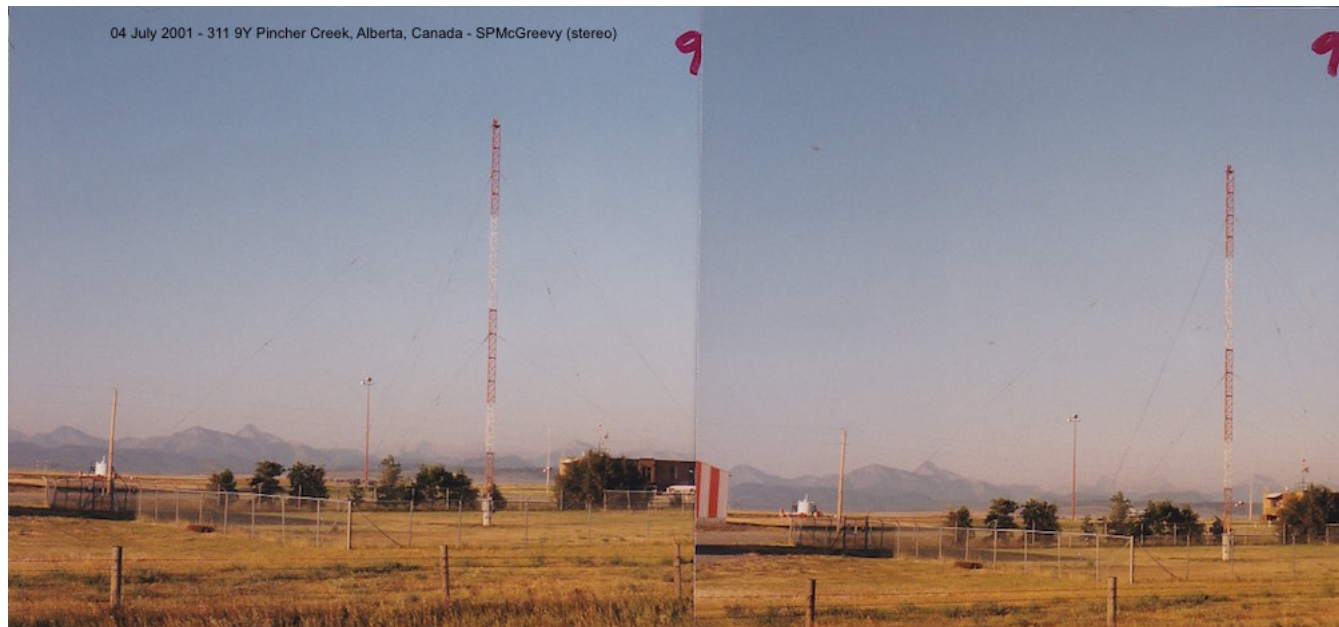


(former) 320 YQF, Red Deer, Alberta. This strong, high-power NDB uses a tall self-supporting mast similar to many U.S. NDB's (namely, the powerful LOM/ formerly-TWEB beacons). Similar antenna mast to 239 OJ - Alberta and 320 HTN Montana (see HTN below). Gail and I drove many miles out of our way to find this beacon, but could not get closer than this somewhat distant shot. Strong signal throughout western North America with 400 Hz USB ident modulation pitch (monitor 320.4 kHz in narrowband in CW/SSB mode) S. McGreevy, September 1993. 320YQF.jpg 25,049.

N5 224, Rocky Mountain House,



311 kHz 9Y Pincher Creek airport, Alberta. Taken on 04 July 2001, this pretty beacon is located at the Pincher Creek airport. I drove right by 9Y on my way into Pincher Creek in order to get my van's oil-seal fixed there. This beacon employs the uppermost of three or four guy wires as its capacitance umbrella, as do many Canadian NDB's. It can be heard on its 400 Hz USB ident at 311.4 kHz between the US DGPS beacon data streams. Sometimes HY Hay River NWT accompanies it in good conditions. Last logged in the desert of Calif. Christmas morning 2005. S.P. McGreevy



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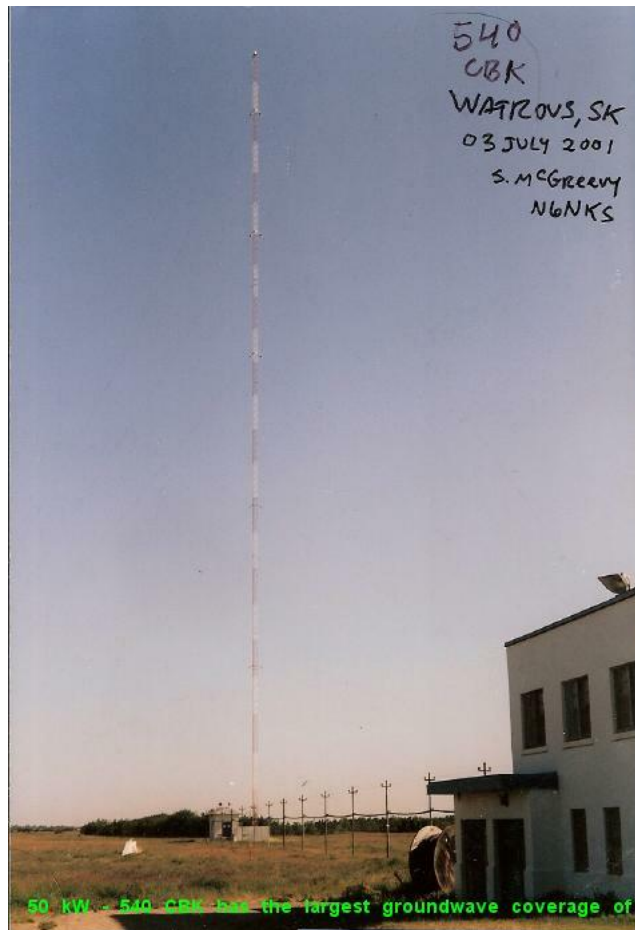
## 540 CBK Saskatchewan:





540 CBK Watrous, SK - July 2001 - SPMcGreevy

540 CBK Watrous, Saskatchewan (CBC-1). Returning southward from northern Saskatchewan after my VLF Recording Expedition, and on my way toward Waterton Park, Alberta, I van-camped 10 miles from CBK. The next morning 03 July 2001, I stopped by this great AM/MW radio station to take some more pictures, augmenting my photo collection of CBK from September 1993. 540 CBK has a gorgeous-looking white and blue painted building to the east of Watrous; their open RF feedline is visible along with a black power cable. 540 CBK has the largest groundwave coverage of any North American AM-BCB station (the second largest is 550 KFYZ Bismark, North Dakota with 5 kW) due to very-high ground-conductivity of ~30 mmhos (and greater possibly). On a good car radio, the daytime groundwave from 540 CBK is clearly listenable from the foothills of the Rockies in Alberta well southward into the Great Plains of central South Dakota and northward up to the NWT border from experiences via eight road trips. Nighttime reception can be clear even in Hawaii, if western Samoa or XEWA San Luis Potosi, SLP, Mexico (etc.), are not interfering. During my travels in Sask. I noticed quite a number of residents tuning into CBK all over the Province - CBK's great coverage is important to the Canadian Broadcasting Corporation (CBC). (Local ground-conductivity at Watrous/CBK exceeds 30 mmhos! Contrast that with 0.3 mmhos ground-conductivity calculated in the Hilo, Hawaii [lava-geology] region from the 1060 KAHU signal measurements made in Sept. 1986 - see 1060 KAHU further below toward the page bottom).



540 CBK - Watrous, Saskatchewan - S.P. McGreevy - 03 July 2001

50 kW - 540 CBK has the largest groundwave coverage of any AM broadcast station in Canada and the United States.

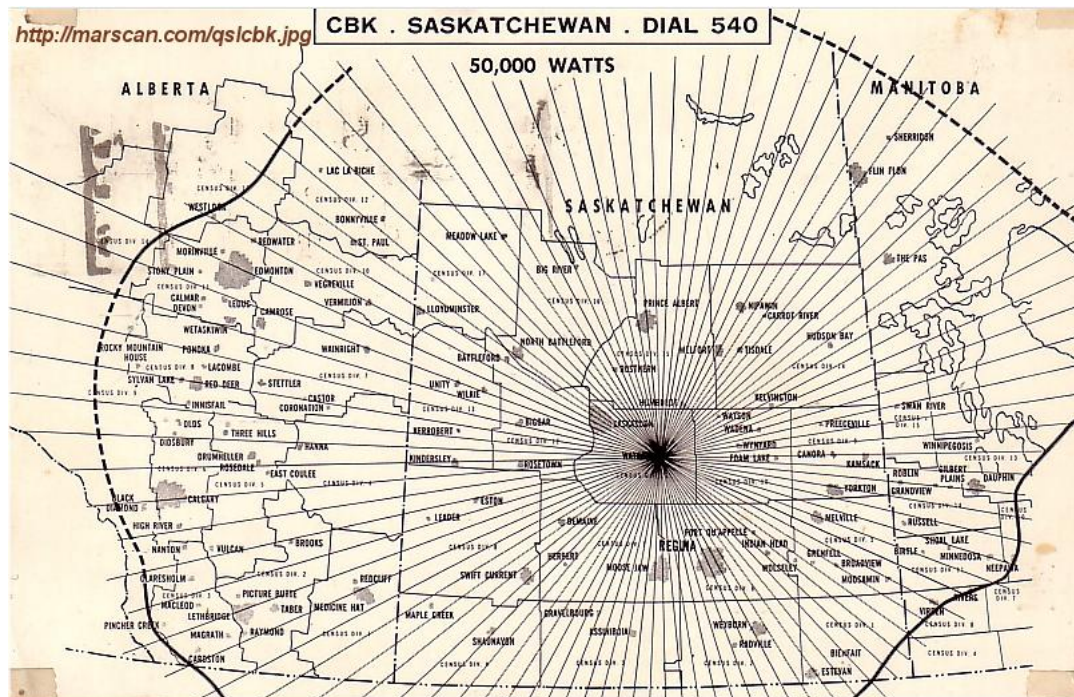




540 GBK Watrous, Sask. -- July 2004 -- SPMcGreevy











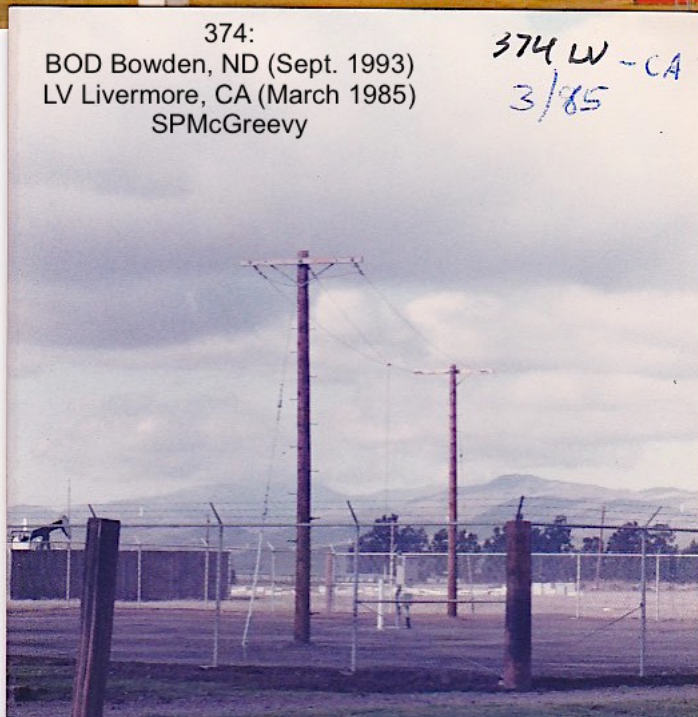
**United States:**





374:  
BOD Bowden, ND (Sept. 1993)  
LV Livermore, CA (March 1985)  
SPMcGreevy

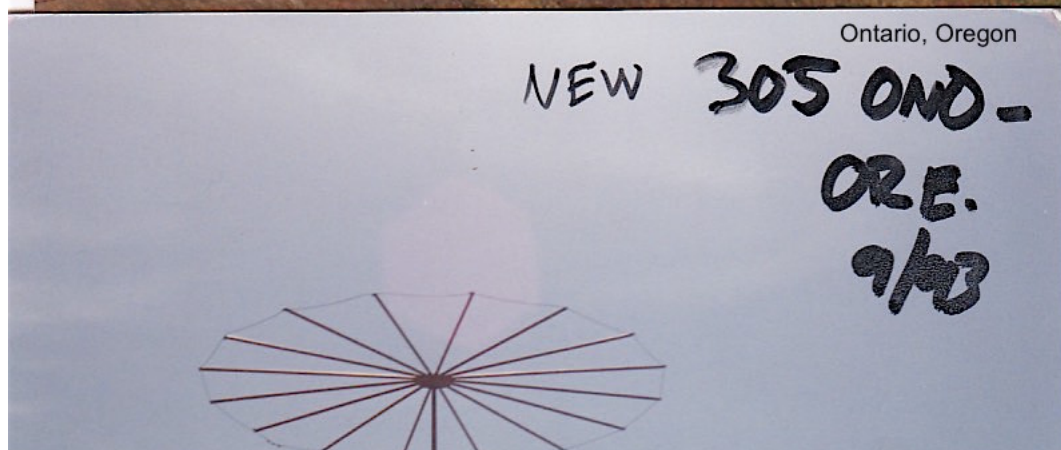
374 LV - CA  
3/85





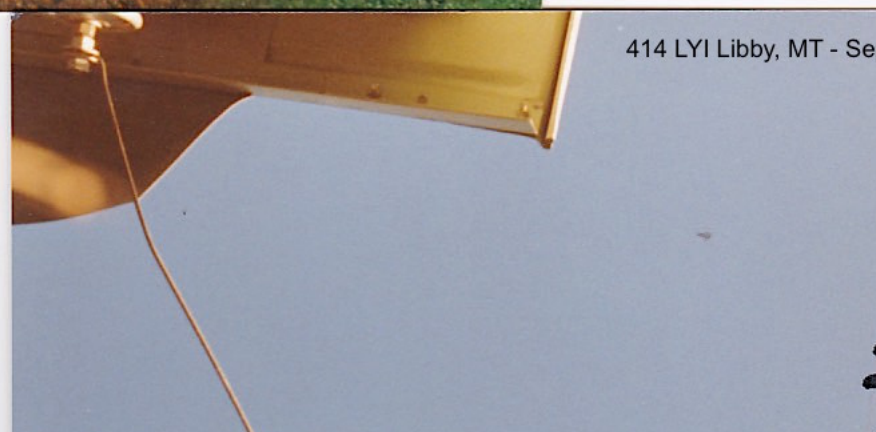
Hettinger, ND

392 HE1 -  
N.D  
9/93



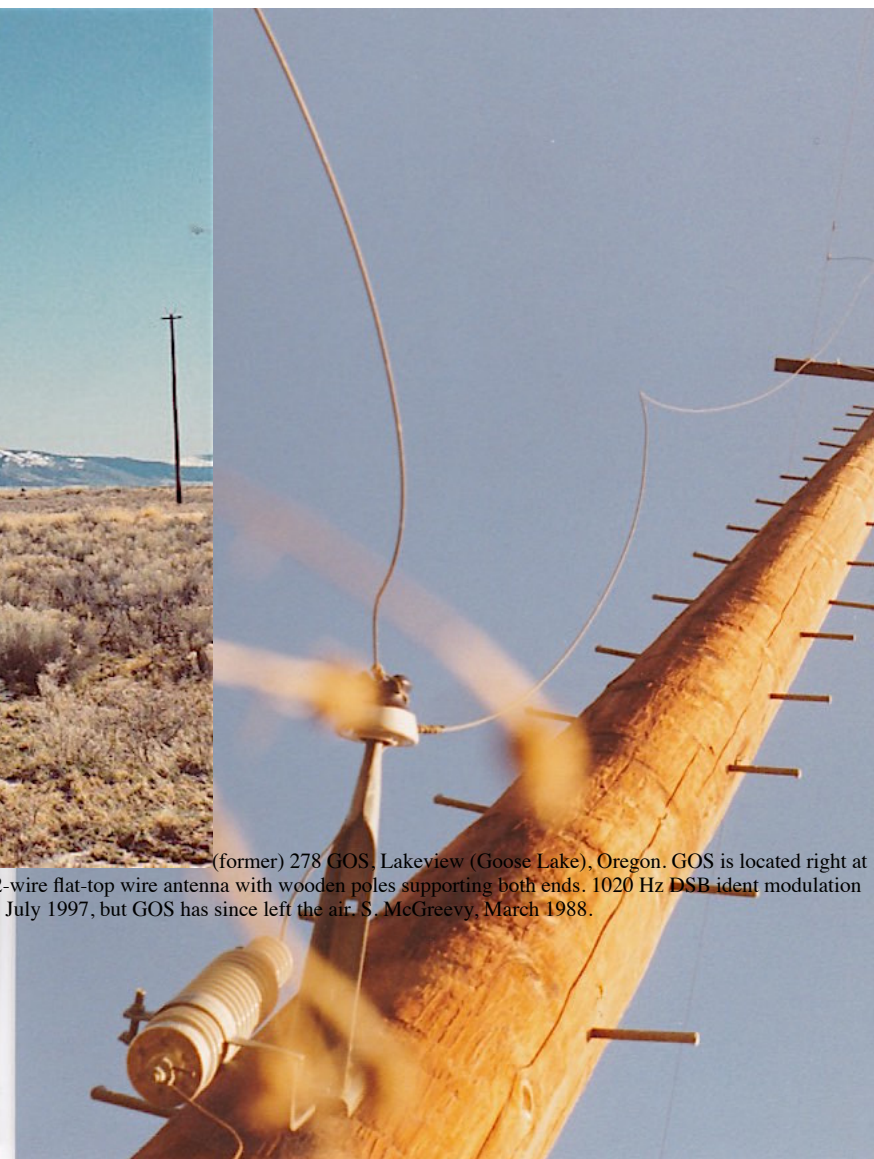
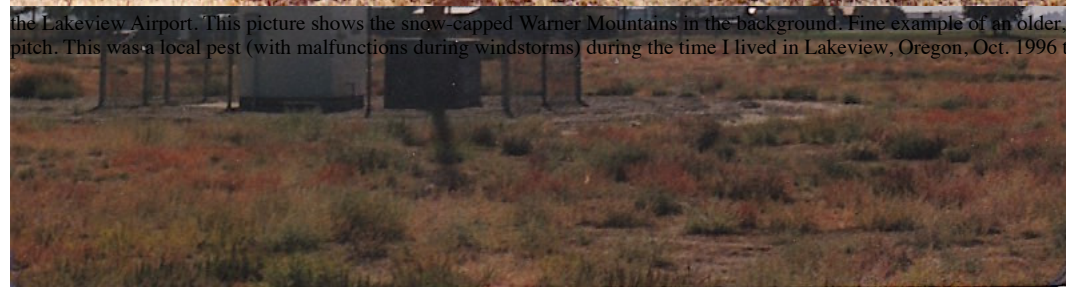
Ontario, Oregon

NEW 305 OND -  
ORE.  
9/93



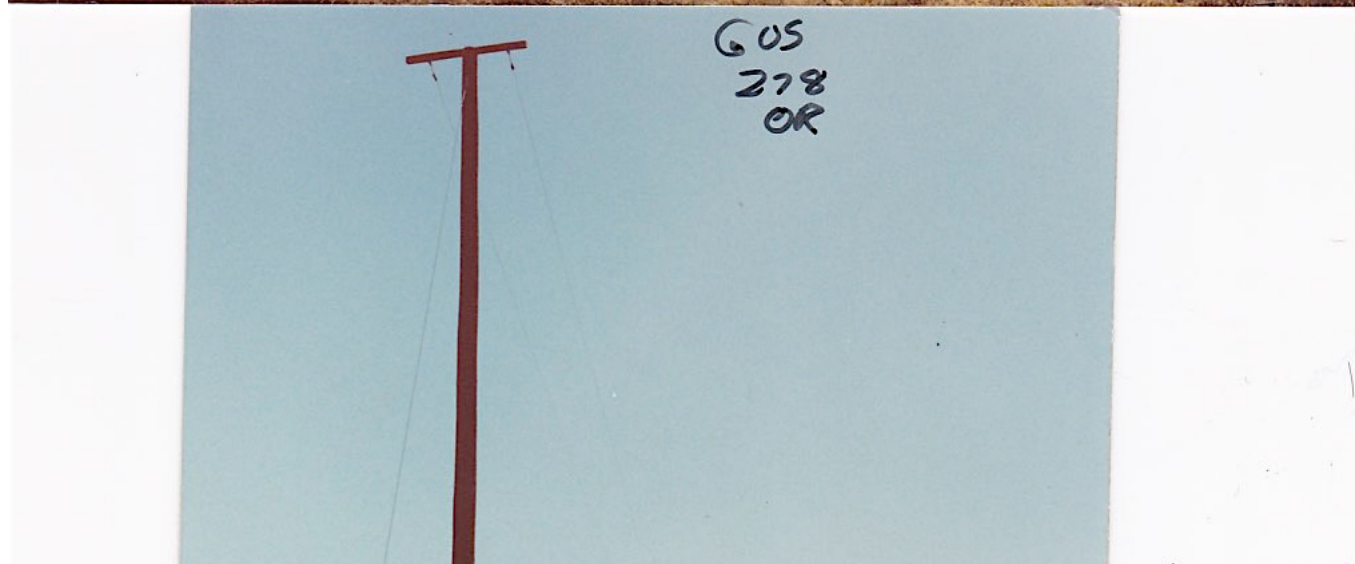
414 LYI Libby, MT - Sep





(former) 278 GOS, Lakeview (Goose Lake), Oregon. GOS is located right at the Lakeview Airport. This picture shows the snow-capped Warner Mountains in the background. Fine example of an older, 2-wire flat-top wire antenna with wooden poles supporting both ends. 1020 Hz DSB ident modulation pitch. This was a local pest (with malfunctions during windstorms) during the time I lived in Lakeview, Oregon, Oct. 1996 to July 1997, but GOS has since left the air. S. McGreevy, March 1988.







404 CUF Columbia (Sonora), Calif. - SPMcGreevy - June 1984



March 1988



263 UAD Chualar, Calif. - January 1988 - SPMcGreevy

374 LV Livermore, Calif. - March 1985 - SPMcGreevy





(former) 396 BNO Burns, Oregon - June 1984 - SPMcGreevy.

**Beacon of Interest - 404 MOG (formerly TWEB on 382 kHz):**

(formerly 382) 404 MOG, Montague (Siskiyou County), California. Low-res. scan of photo taken back in June 1985, this beacon, then on a weaker 382 kHz frequency, had a whimsical-looking (to us) "inverted coathanger" antenna not seen before, and had TWEB (Transcribed weather broadcasts). Sometime in the mid 1990's, MOG moved up to 404 kHz and has a much bigger signal (one of California's biggest signals now) due to tall vertical and top. cap. hat like the newer 305 ONO Oregon installation (see further below for those installations) or the power was increased dramatically. Mount Shasta makes for a gorgeous background! S. McGreevy, June 1985. 382mog.jpg, 34,784 bytes.

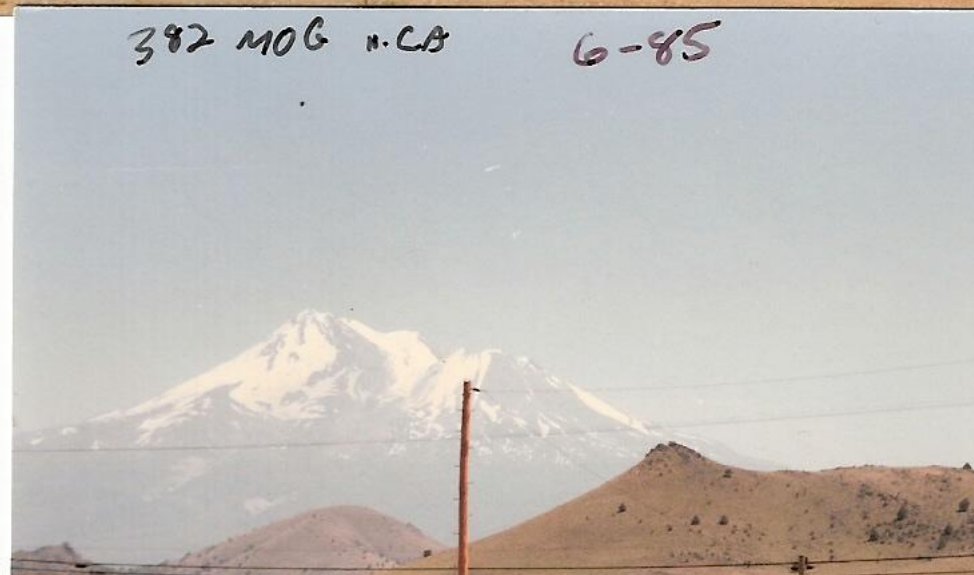
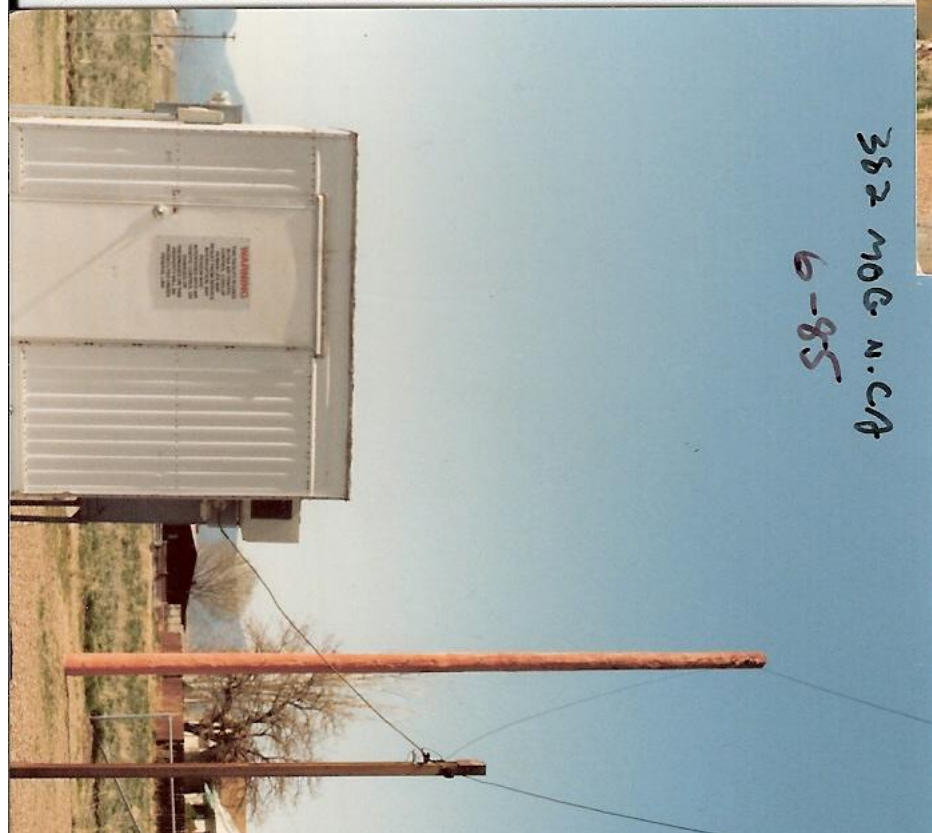




## 382 MOG Montague, California

*(now on 404 kHz with higher power)*

Big-detailed photos of the former MOG NDB when it was 382 kHz in June 1985. - SP McGreevy





390k: Very detailed scans of 4 original prints I took of the (former) 382 MOG installation in June 1985 with inverted coathanger antenna! Image is 390k. Far better than first low-res. photo scan done 11 yrs. ago. S. McGreevy April 2007

### Sectional chart



Click on chart to expand

Sectional chart courtesy of SkyVector.com

<http://www.airnav.com/airport/KSIY>

MOG 382 (now 404) N. CA  
6-85

400\_usb\_14april11.wav

File Variables Pointers Help

400 kHz USB-mode - TS480, Yaesu FRT-7700 preselector/preamp, loop oriented north-west/south-east  
0940 UT - Thur. 14 April 2011 - Keeler, California by Stephen P. McGreevy - N6NKS

403.0 LSB ident of MOG - Montague, CA

weak 402.0 idents, MOG harmonic

401.0 USB ident of ENS-E Ensenada, BCN, Mexico

400.4 USB ident of QQ-Comox, BC, Canada





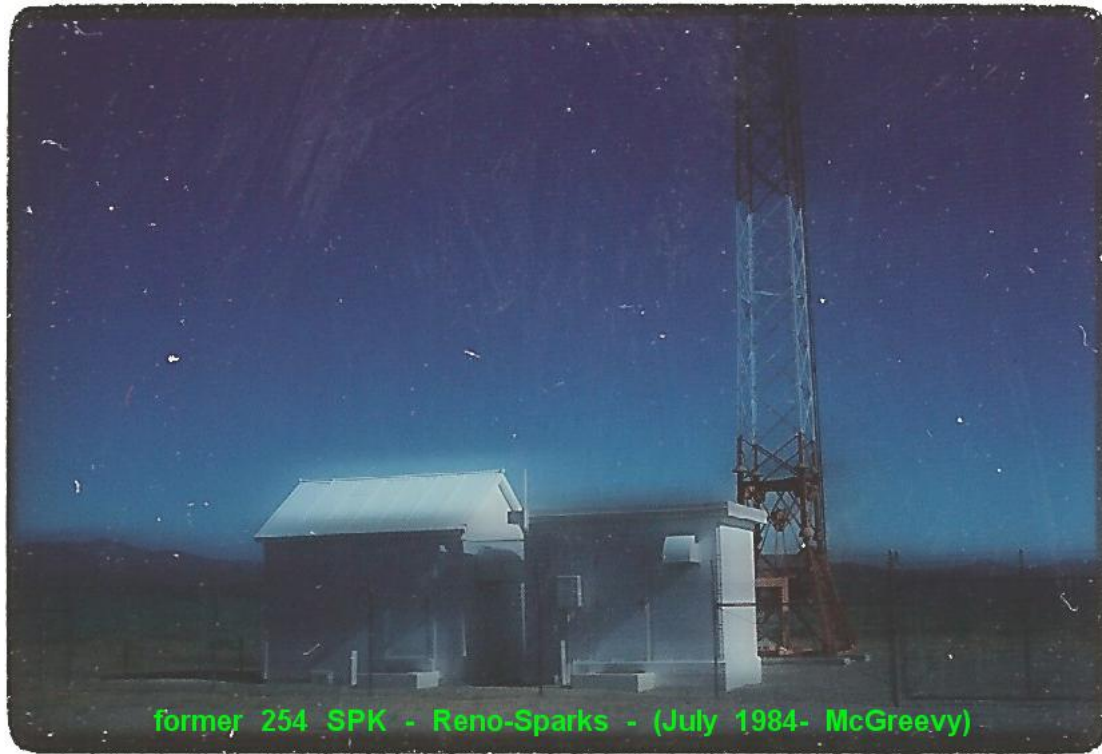


former 254 SPK - Reno-Sparks - (July 1984- McGreevy)

(former) 254 SPK, Sparks (Reno), Nevada. (scans from SLIDES - that's why they look a bit funky)

Another ex-TWEB beacon, now off the air, that had a powerful 400 watt signal. I used to love to tune in this beacon as my antenna test beacon when I lived in the SF Bay Area(in the Marin Hills on walks), and for the weather.

This was a LOM to Reno-Cannon Intl. Airport - now only 351 NO remains as their LIM. Large lattice mast - views of transmitter hut and base of the antenna too.



former 254 SPK - Reno-Sparks - (July 1984- McGreevy)

Another image of 254 SPK.

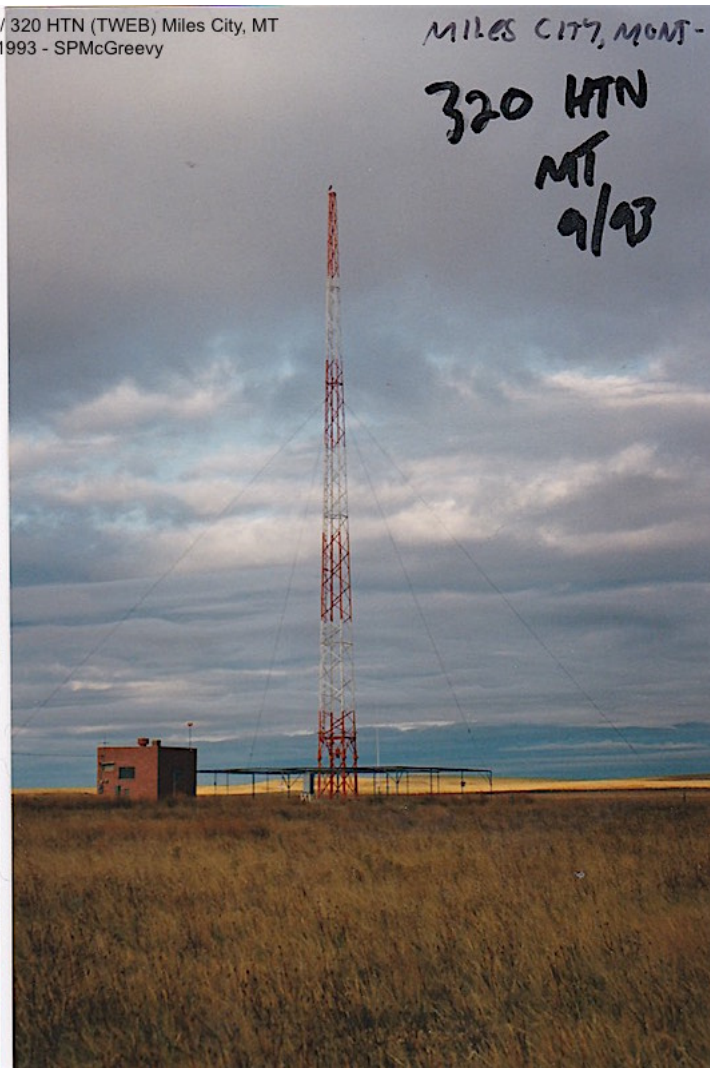


antenna, July 1985.

Scan of print-photo of (former) 254 SPK Sparks/Reno, Nevada (LOM) - view of entire vertical-lattice-



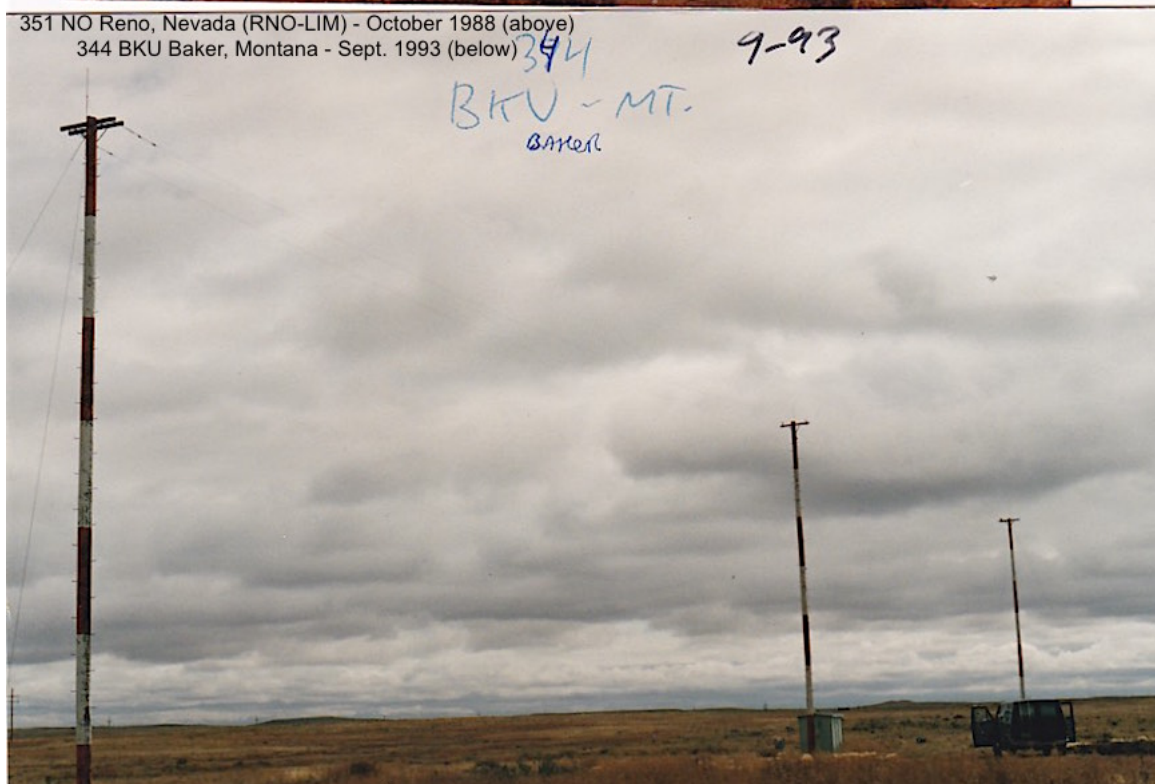






351 NO Reno, Nevada (RNO-LIM) - October 1988 (above)

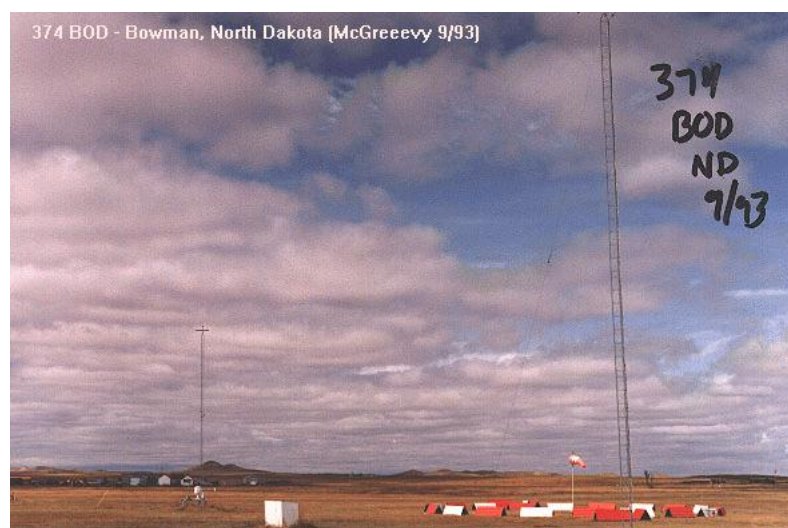
344 BKU Baker, Montana - Sept. 1993 (below)



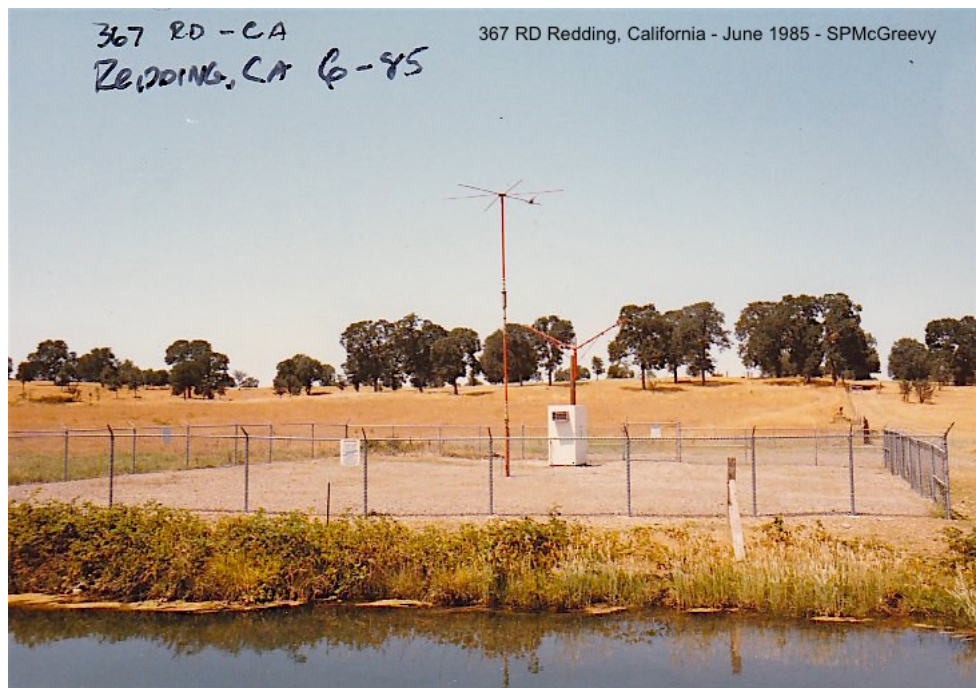
- 344 BKU, Baker, Montana. Another example of an older installation with the red/white painted antenna support poles, 344 BKU has a two-wire flat-top antenna supported by wooden poles - these particular ones painted red



and white. Fairly easily heard in California but on a crowded frequency. We had to drive a bit through and around the town to find this one! S. McGreevy, September 1993.



374 BOD - Bowman, North Dakota. BOD has guyed steel-lattice masts supporting a wire flat-top antenna. This beacon is harder to catch in California (on a busy frequency and does not radiate skywave too well for the antenna size). S. McGreevy, September 1993. BOD374.jpg, 37,867 bytes.



(Former) 367 RD - Redding, California. Standard FAA 25-watt installation, CI has a 6-spoke top-cap umbrella and self-supporting tubular mast with center loading coil. Sheldon Remington, John Seamons, and myself spent a couple of hours and many miles DFing down this beacon which is hard to spot from afar and located well away from the airport. We had to hike in a bit to the installation, and also the temperature was about 100 deg.-F. S. McGreevy, June 1985. A 75 MHz marker beacon antenna is just to the right of the NDB antenna. Also June 1985 just before the 327 CI visit.





(Former) 274 CQI - Council, Idaho. This beacon was notorious in the early to mid 1980's when it had severe 'negative keying' on its carrier signal (its carrier dropped substantially when the ident tone was keying) leading to many reports of an unID "IAEIK" beacon, and CQI also radiated a well-heard negatively-keyed 7th-harmonic in the 160-meter amateur-radio band on ~1918 kHz! In March 1988, I deviated 160 miles from my planned route in order to see this notorious beacon, which by then was behaving almost normally. CQI then had an older flat-top wire antenna supported by wooden poles. During 1997 - 1999, it's ident and carrier had not been detected in California, and I think it went off the air back then, as so many NDBs are today. Photo taken March 1988 by S. McGreevy. CQI274.jpg, 18,250 bytes.





to Sulphur and Jungo, Nevada, has a standard FAA tubular, center-loaded mast with an 8-spoke umbrella with wire skirt - a variant of the hard-to-spot standard 25-watt FAA installation (a la 327 CI and 263 UAD, etc.). Winnemucca Mtn. is in the background, and this photo is one of my favorites. Sometimes, EMC has an ident malfunction, sending "EAC.". S. McGreevy, June 1987. EMC375.jpg, 31,300 bytes.

356 FR - Medford, Oregon IM (McGreevy, 6/85)



SPMcGreevy - June 1987

(former) 375 EMC, Winnemucca, Nevada. EMC, located about 8 miles northwest of Winnemucca on the dirt road

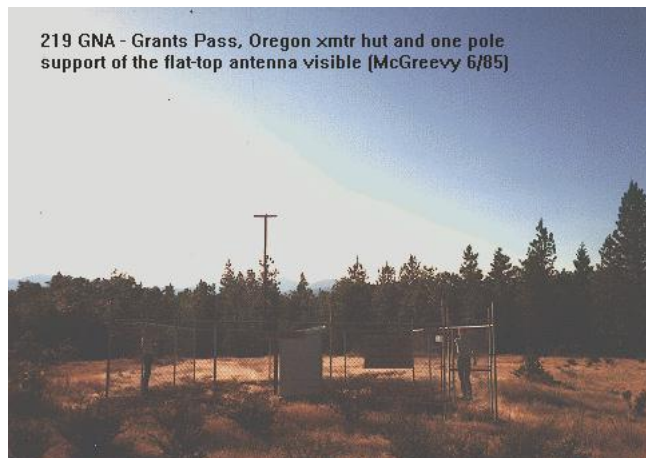


356 FR Medford, Oregon (MFR outer-marker - LOM) - June 1985 - SPMcGreevy

- 356 MEF Medford, Oregon: (formerly) 356 FR, Medford Oregon airport. Now "MEF" in 2015 onwards - a location-outer-marker (LOM) beacon installation not far from the northern end of the MFR runway, FR (MEF) uses a single-wire flat-top antenna. S. McGreevy, June 1985. (See 373 MF Medford (LIM) below.)

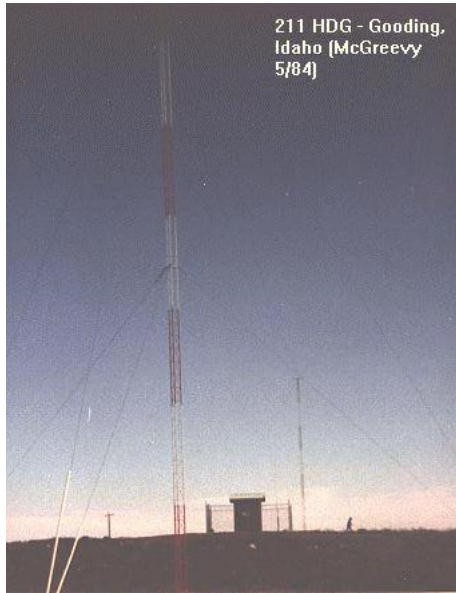


(Former) 373 MF, Medford Oregon area. MF, a location-inner-marker (LIM) beacon installation, is similar to FR above. Note the back-up fiberglass mast antenna! Two photos in this image, and John Seamons - KF6VO; Steve McGreevy - N6NKS; and Shel Remington - formerly NI6E / now KH6SR, are in the top photo in front of the beacon with two Sony ICF-7600Ds (gray-market model equiv. to the ICF-2002). We used the Sony's to DF this beacon. S.P. McGreevy June 1985.



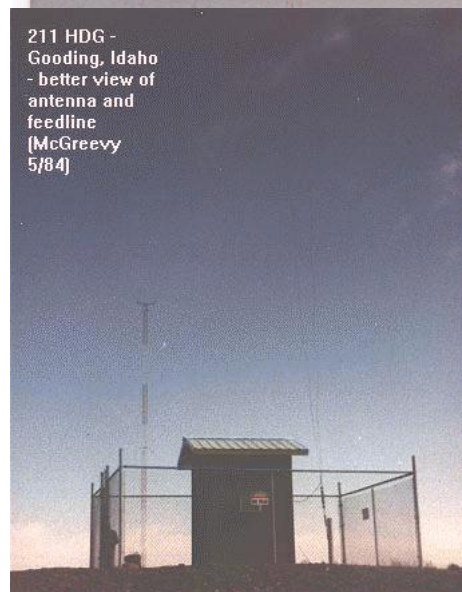
(former) 219 GNA, Grants Pass (Merlin) Oregon We had to DF this one in order to find it. GNA uses a 2-wire flat-top antenna and wooden support poles, well hidden in a pine woodland. S. McGreevy, June 1985. GNA219.jpg, 25,293 bytes.





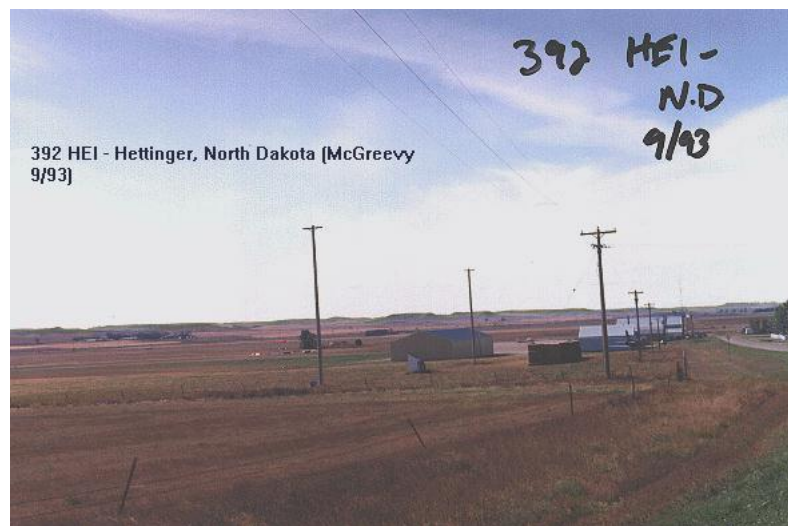


- (Former) 211 HDG, Gooding, Idaho HDG has a large flat-top wire antenna and fairly tall guyed lattice masts supporting the flat-top antenna - large so it can radiate on this relatively low NDB frequency and formerly located next to the Gooding airport. Photographed late May 1984 by Stephen McGreevy. (Sheldon Remington is the small figure in the larger photo).



211 HDG -  
Gooding, Idaho  
- better view of  
antenna and  
feedline  
[McGreevy  
5/84]

211 HDG, Gooding, Idaho. Another view of HDG. HDG211B.jpg, 23,234 bytes

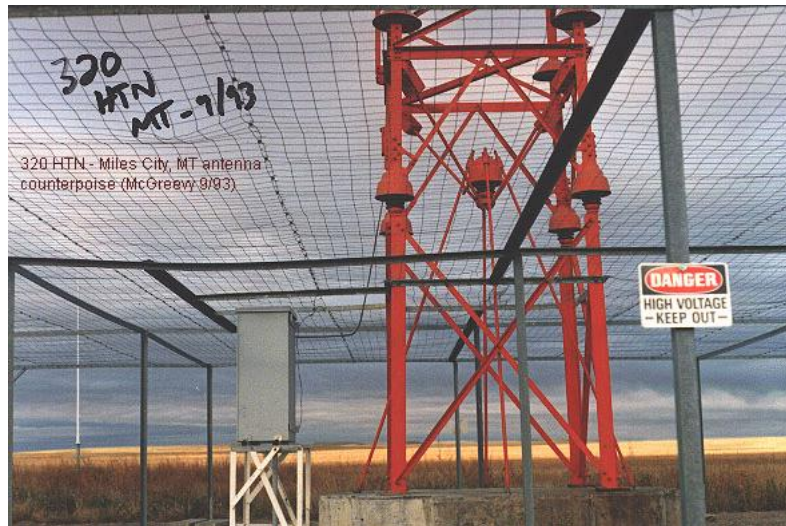


392 HEI - Hettinger, North Dakota [McGreevy  
9/93]

392 HEI -  
N.D  
9/93

(former) 392 HEI, Hettinger, North Dakota. HEI used to radiate very well and was heard well throughout California and within 1-hop range (within 1300 miles). Also heard well in Hawaii by myself and others. HEI used a fairly standard, old-style 2-wire flat-top supported by wooden poles. S. McGreevy, 9/93. HEI392.jpg, 30,838 bytes







320 HTN - Miles City, MT (counterpoise)

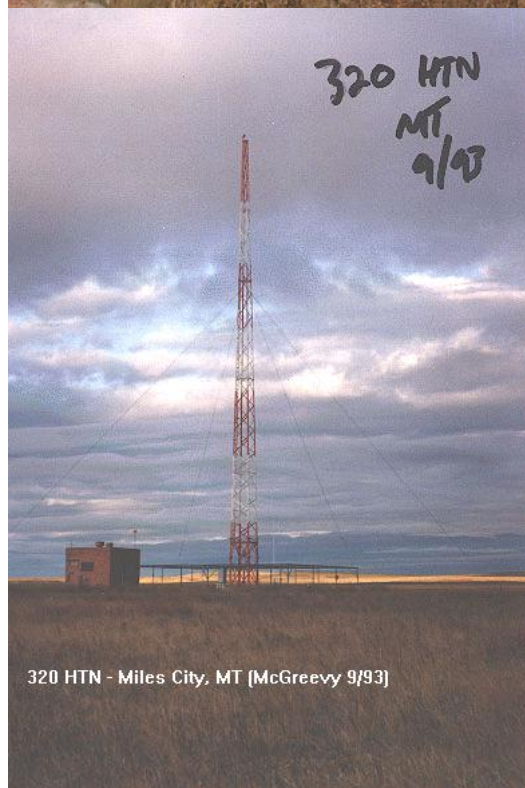
and

344 BKU Baker, MT  
 Sept. 1993 - SPMcGreevy  
 344 BKU -  
 MT  
 9/93



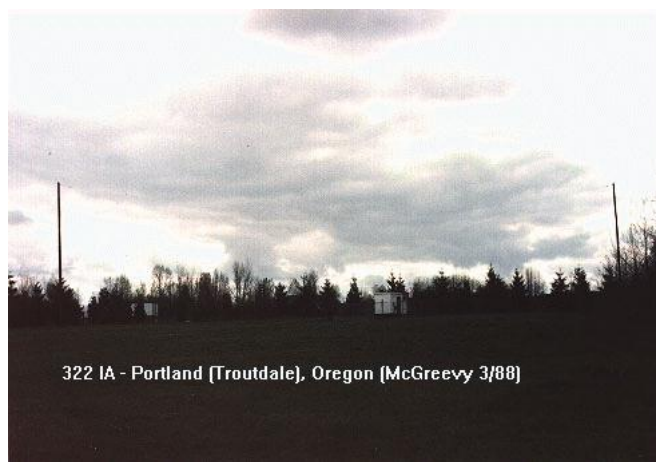


(former) 320 HTN, Miles City, Montana: Like most former medium and high-powered TWEB (Transcribed WEather Broadcasts) outlets, HTN has a lattice antenna mast. HTN also has an elevated ground-counterpoise to aid in signal radiation (this photo), and owing to frequent high winds in this part of the High Plains/badlands country, HTN has its mast guyed (see the next HTN photo)! Gail and I had to do quite a bit of searching and DFing to get to this beacon - the large mast was easy to spot miles away, however, it took time to find the right road through strange terrain to get to it. S. McGreevy, 9/93. HTN320.jpg, 68,983 bytes



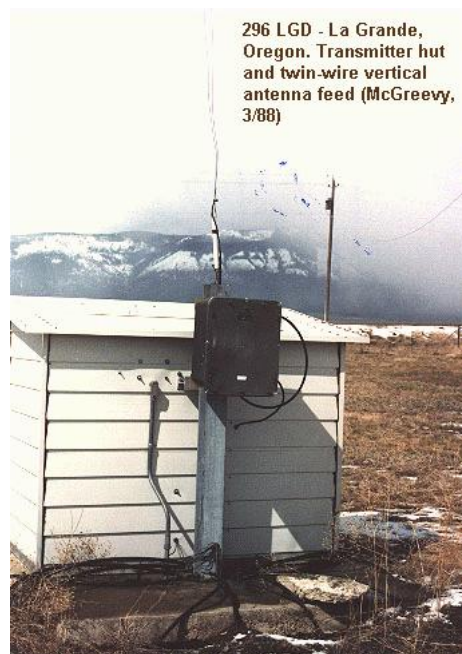
(former) 320 HTN, Miles City, Montana. View of entire installation, including the antenna mast, guy wires and surrounding fields. S. McGreevy, 9/93. HTN320B.jpg,

35,078 bytes



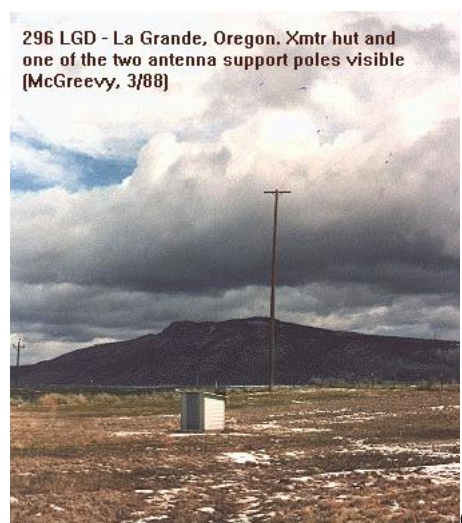
322 IA, Portland (Troutdale), Oregon. IA (later "PD") has a single-wire flat-top antenna and is visible just to the north side of I-84. When I visited, there was moss hanging from the antenna wire! S. McGreevy, 3/88. IA332.jpg, 20,819 bytes





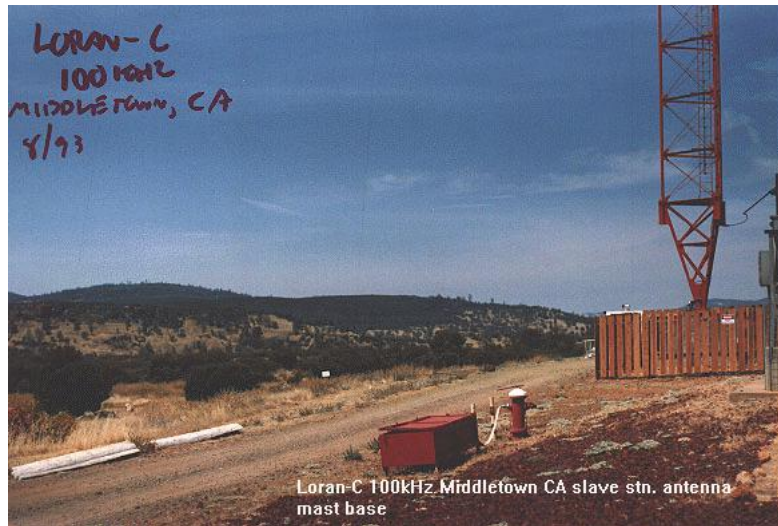
296 LGD - La Grande, Oregon. Transmitter hut and twin-wire vertical antenna feed (McGreevy, 3/88)

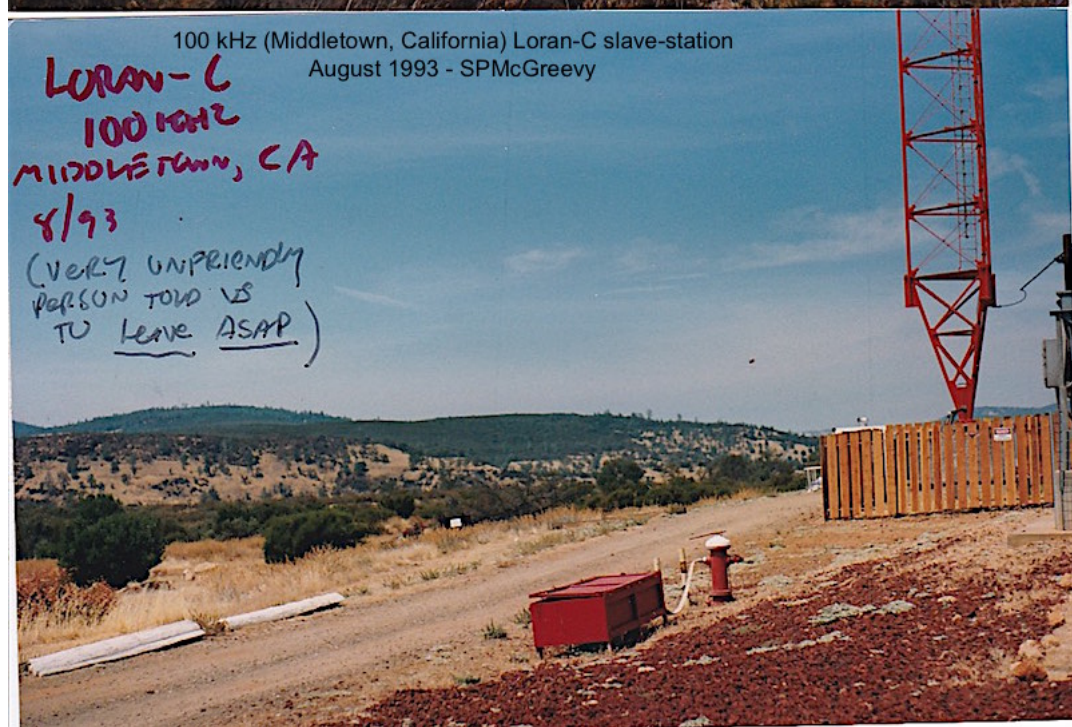
(former) 296 LGD, La Grande, Oregon. This is a view of the transmitter hut and feedline to the two-wire flat-top antenna. As you can see in the photo, it was snowing in spots all around me when I took this photo March 1988 the same day after visiting 274 CQI Council, Idaho and 303 ONO Ontario, Oregon. LGD is an aeronautical beacon within the marine DGPS marine-sub-band of 285 - 325 kHz, and so it now suffers considerable DGPS interference, thus requiring narrowband receiving techniques to clear up its ident. LGD296A.jpg, 39,810 bytes



296 LGD - La Grande, Oregon. Xmtr hut and one of the two antenna support poles visible (McGreevy, 3/88)

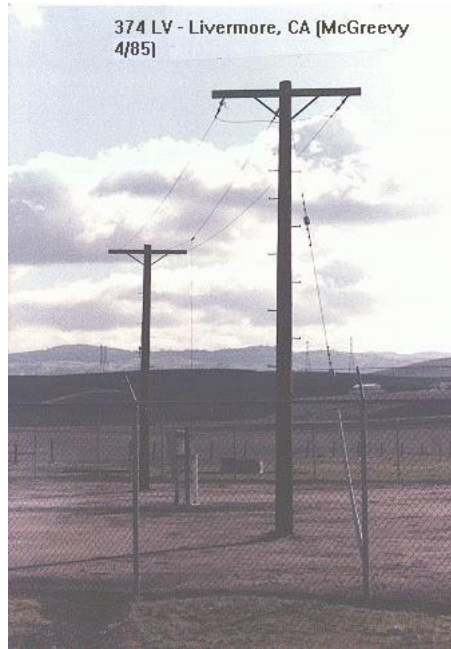
(former) 296 LGD, La Grande, Oregon. A more distant view of the transmitter hut and one of the two wooden poles supporting LGD's wire flat-top antenna. S. McGreevy, 3/88. LGD296B.jpg, 32,559 bytes



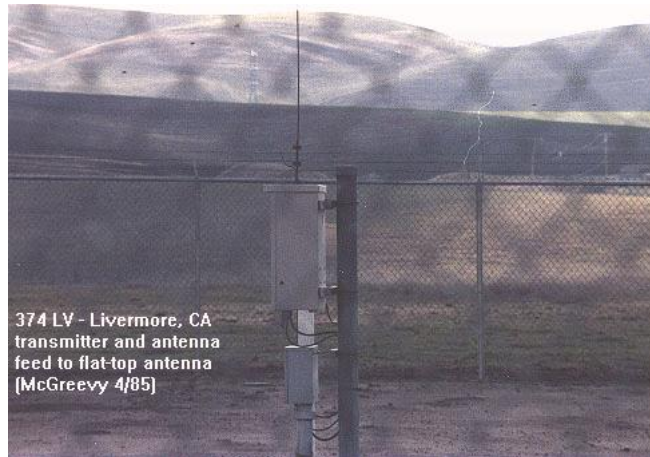




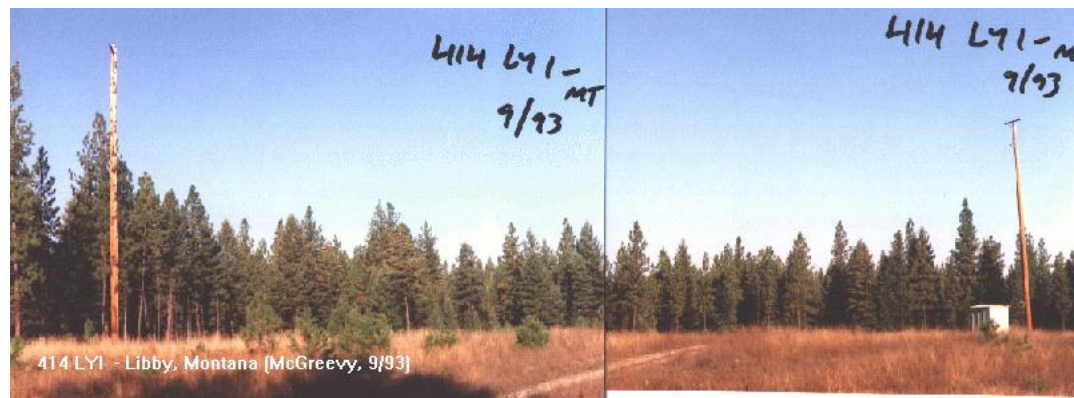
(former) Middletown, California LORAN-C (100 kHz) Slave-station: Gail and I were cruising around the area in August 1993 and decided to pay the U.S. Coast Guard run LORAN-C radionavigation station a visit. We were told to leave at once by a very impolite USCG man, surprisingly so very unlike our Omega visit in North Dakota in Sept. 1993 which was way-more friendly. Before we asked to visit and were turned away, I took this photo of the base of the huge (700 foot-tall) antenna mast, with three of its top-capacitance-hat (umbrella) guywires visible behind the mast. S. McGreevy, 8/93. loranc.jpg, 47,388 bytes



(former) 374 LV, Livermore, California. A good spring 1985 picture of LV's small, three-wire flat-top antenna fed by one vertical wire attached only to the middle flat-top wire. Two wooden poles support the antenna. Being an old photo, this antenna may have been replaced by a newer free-standing tubular mast antenna with the umbrella top-cap. hat, like 375 EMC, Nevada, 263 UAD, Calif., etc. S. McGreevy, 4/85. LV374.jpg, 27,436 bytes



(former) 374 LV, Livermore, California. A view of LV's transmitter/tuning-unit enclosure and antenna feed-line. S. McGreevy, 4/85. LV374B.jpg, 32,733 bytes



414 LYI - Libby, Montana [McGreevy, 9/93]

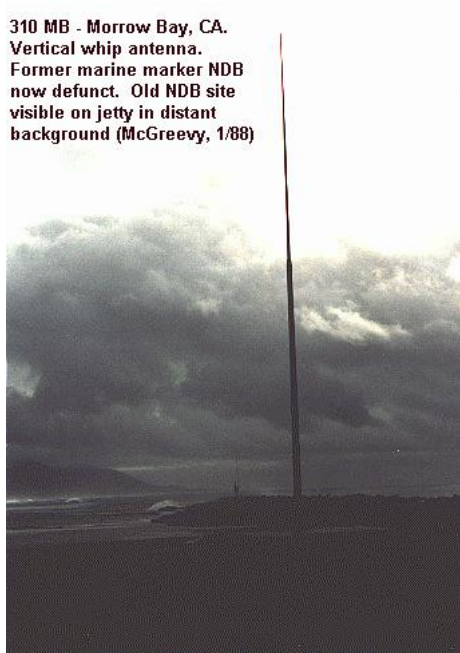
414 LYI, Libby, Montana. Such a wide antenna - I had to tape the two prints together get just the left-half of LYI's (2-wire) flat-top "T-wire" antenna in view. LYI no doubt uses locally cut timber from the nearby National Forest for its three antenna support poles (the right-side of the antenna is not visible in this two-photo panorama. LYI gets out the best amongst the 414 kHz western US beacons, no doubt due to its relatively large antenna. This one took some time DFing and walking-to through the woods! S. McGreevy, 9/93 LYI414.jpg, 42,546 bytes



Note the 75 MHz dual yagi-antenna VHF inner marker beacon.

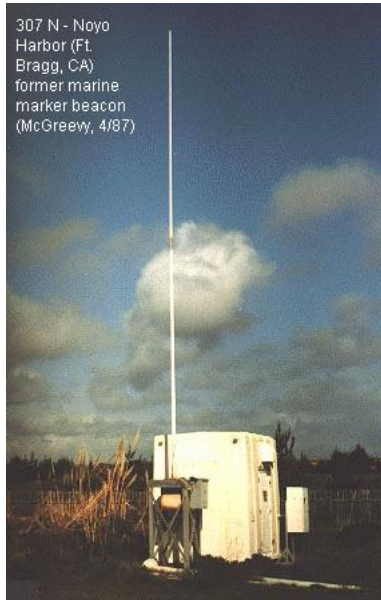
389 EN - Kenosha, Wisconsin. June 2014 - photo by Joe Overhuls (still on-air as of mid\_june 2014.

**310 MB - Morrow Bay, CA.  
Vertical whip antenna.  
Former marine marker NDB  
now defunct. Old NDB site  
visible on jetty in distant  
background (McGreevy, 1/88)**



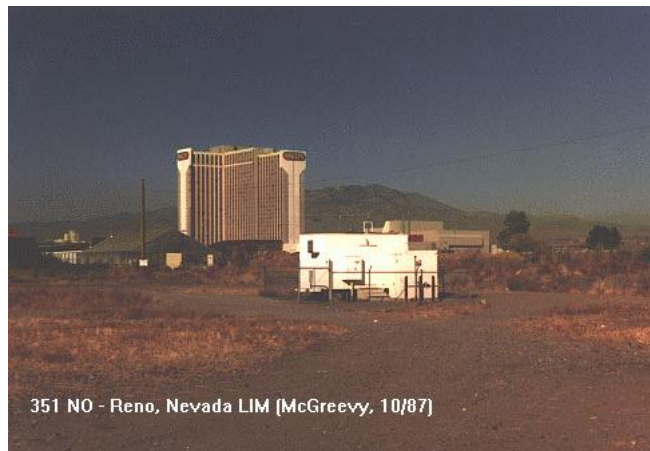
(former) 310 MB, Morrow Bay, California. MB is a former marine marker NDB and used a vertical whip antenna. A former installation farther out on the jetty is seen in the distant background - probably too difficult to maintain in the wave spray! MB is off the air- replaced by the USCG DGPS beacon system in the marine 285 - 325 kHz sub-band. Photo by S. McGreevy, 1/88. MB310.jpg, 26,888 bytes

**307 N - Noyo  
Harbor (Ft.  
Bragg, CA)  
former marine  
marker beacon  
(McGreevy, 4/87)**

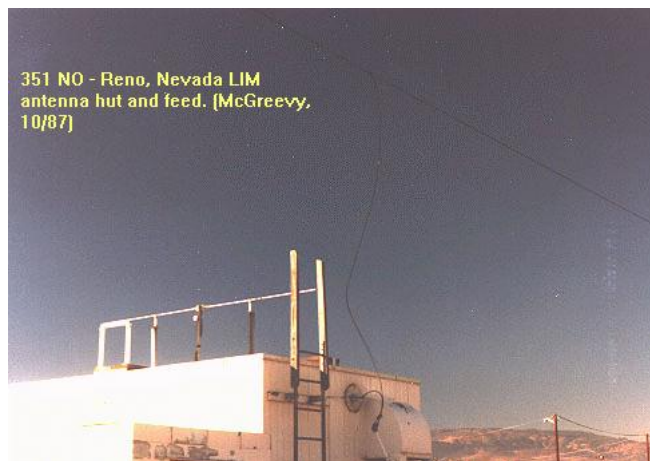


(former) 307 N, Noyo Harbor (Ft. Bragg), California (former marine marker beacon). N is another example of a small marker beacon situated in harbors and jettys. It also employed the standard USCG fiberglass-whip vertical antenna. The transmitter hut is also fiberglass. This 10-watt beacon was taken off the air in the early 90's, replaced by the DGPS system in the marine sub-band. S. McGreevy 4/87. N307.jpg, 21,932 bytes.

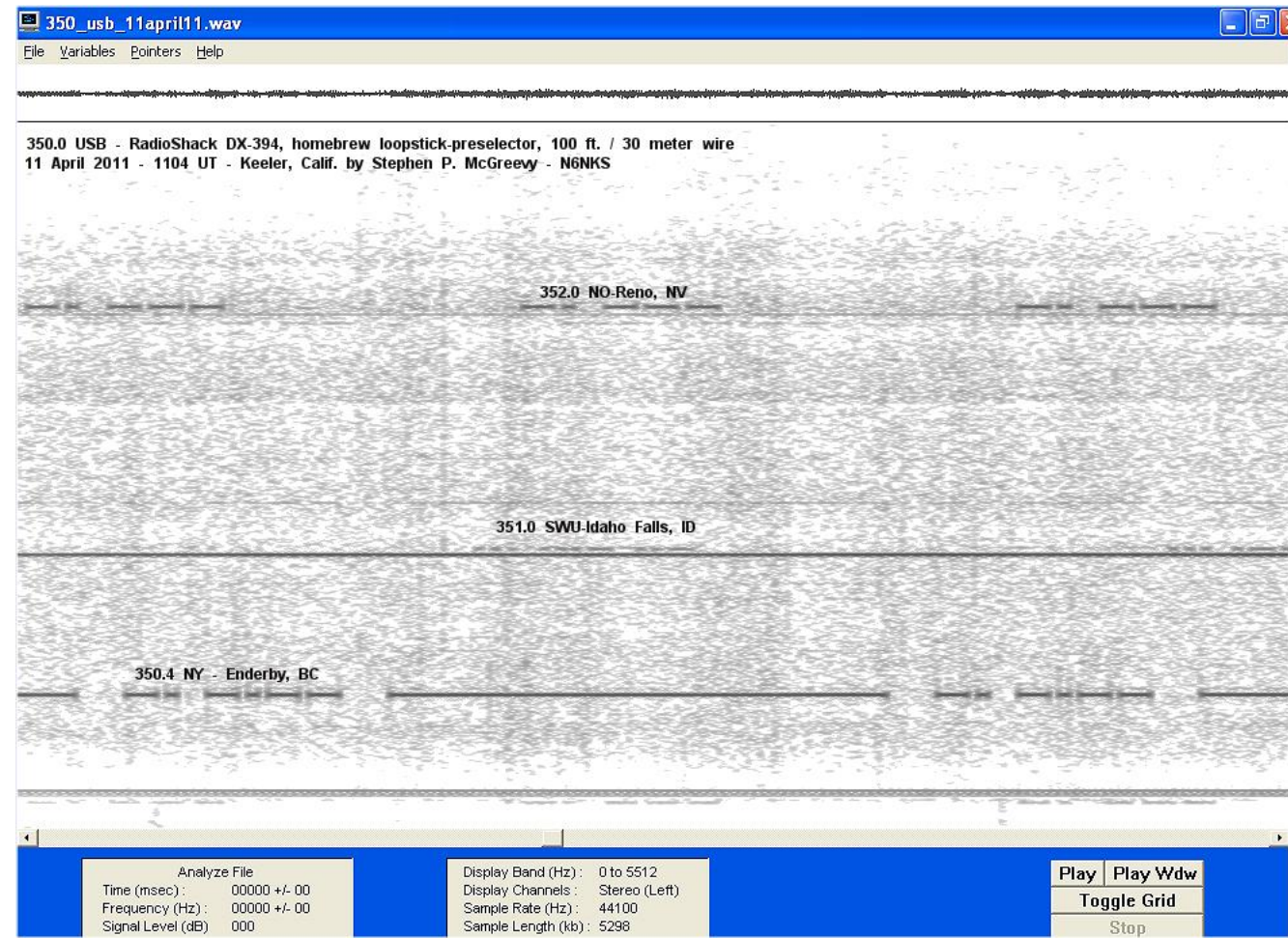




351 NO, Reno, Nevada. (FORMER)(LIM beacon on approach corridor to Reno-Cannon International Airport) 'NO' employed a single-wire flattop antenna supported by short wooden poles. It was located just north of the approach lights to the airport runway across Rock Blvd. This beacon used to radiate remarkably well in western North America for its listed 25 watts. Off-air in 2013. S. McGreevy, 10/87. NO351.jpg, 22,627 bytes.



(former) Another view of the former 351 NO, Reno, Nevada. S. McGreevy, 10/87. NO351B.jpg, 22,272 bytes







Scan of print-photo of 780 KROW Reno, Nevada (now KKOH) July 1985 of their three-tower array north of Reno near SPK NDB





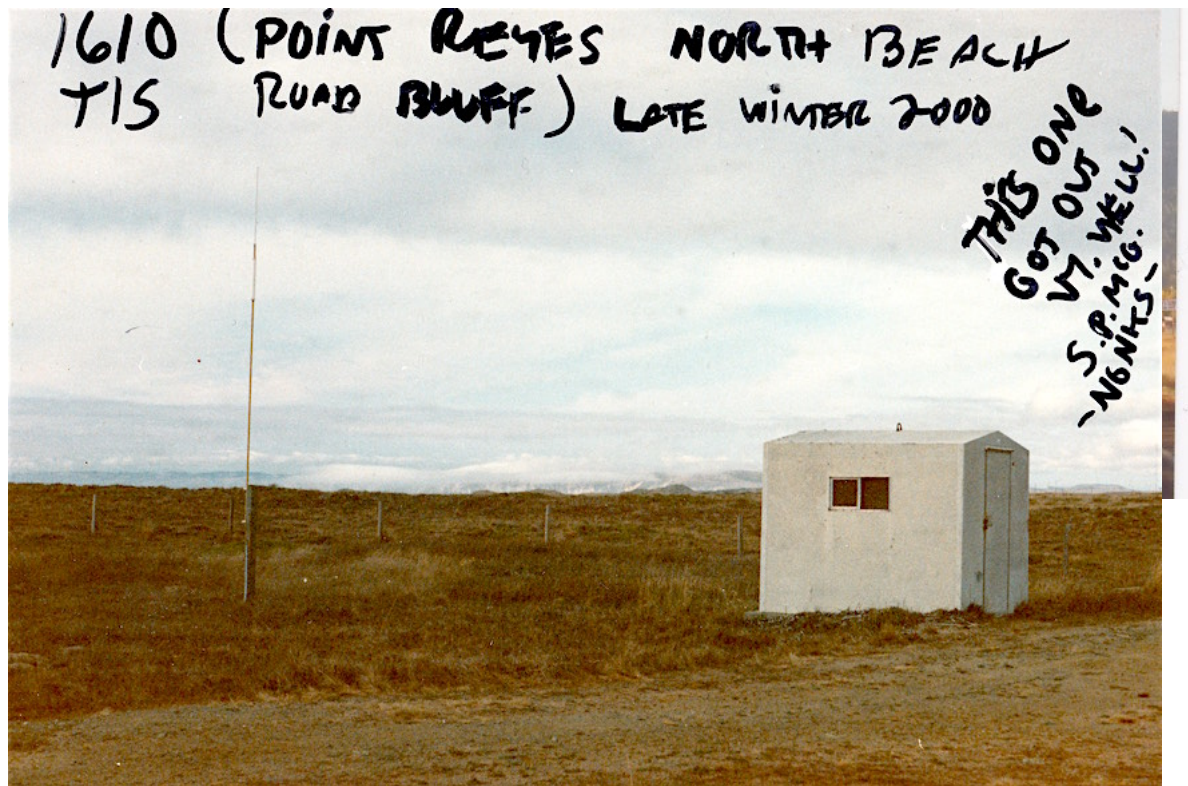
Scan of print-photo of (former) 1510 KTIM San Rafael's lower tower section near some settling ponds with waterfowl



1230 KORT Grangeville, Idaho - 29 Sept. 1993

1230  
KORT-ID  
GRANGEVILLE, ID  
9/29/93





Scan of print-photo of a (former) 1610 TIS (Traveler's Information Station) at North Beach, Point Reyes National Seashore about 1991. This one got out very well owing to its high-and-clear location atop a bluff above the beach.

BELOW: Frank Cathell (K3YAZ) next to the 1610 kHz TIS at Cuyamaca State Park, San Diego County, CA - May 1991.



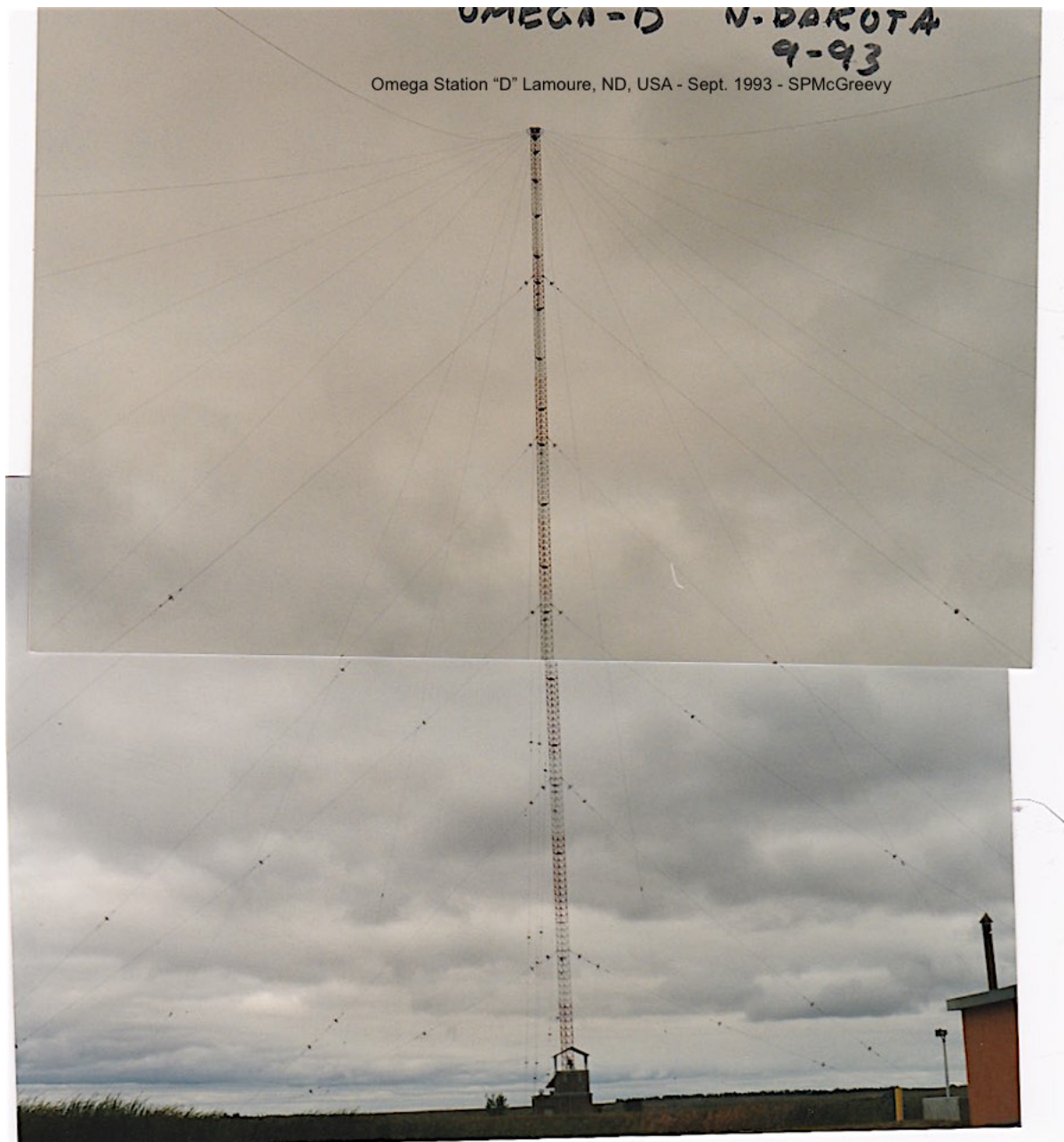


## Omega "D" North Dakota - Sept. 1993:











(former) Omega-D, La Moure, North Dakota. A distant view of the 1200-foot tall antenna taken from near the entrance road to the installation, on 23 Sept. 1993. Omega-Station-D, one of eight Omega transmitters worldwide transmitting in the 10.2 - 13.8 kHz range, [left the air at 0300 UT on 30 September 1997 \(this link is to an article on this\)](#). The USCG personnel at Omega-D were VERY hospitable, and took us on a nice tour of the facility and even partook in a group photo, holding two of my WR-3 receivers. At the time we were visiting, the transmitter was down for routine-maintenance that very day, and we listened to the beeping sounds of Omega-C Hawaii. - a truly fine group of people there in September 1993!

3/8/23, 8:00 AM

Non-Directional Beacon (NDB) Photo Gallery 1984-2018 - Stephen P. McGreevy, N6NKS

Since this visit, [Omega was shut-down Sept. 1997.](#)







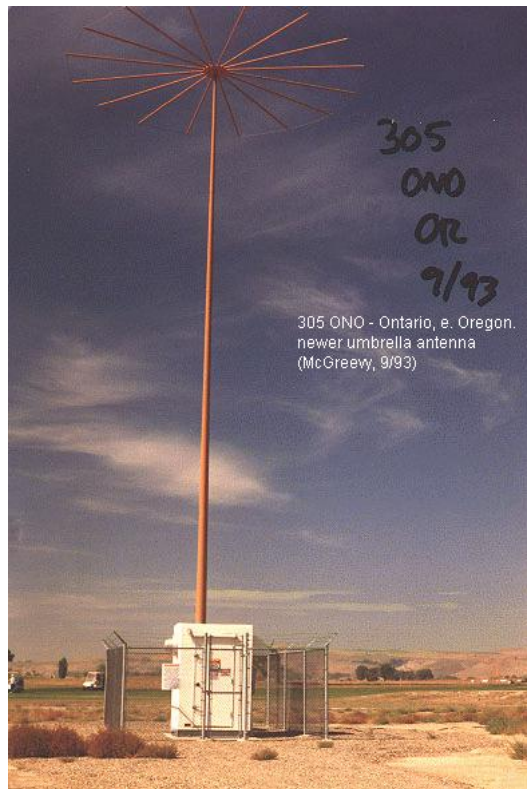




305 ONO - Ontario, e. Oregon. Older wire flat-top antenna (McGreevy, 3/88)

305 ONO, Ontario, Oregon, March 1988. This is a photo of ONO's former antenna, a single-wire flat-top, when I made my first visit to ONO on my way from 274 CQI Council, Idaho earlier that day in March 1988. ONO is next to a golf course. The FAA has slowly been replacing aging wire and post antennas with newer free-standing tubular masts with the umbrella top capacitance hat. See the next photo for a look at ONO in late September 1993. S. McGreevy, 3/88. ONO305A.jpg, 27,062 bytes.







305 ONO, Ontario, Oregon, September 1993. This photo shows the replacement antenna, a tall and hefty tubular antenna mast and 16-spoke top. capacitance-hat with a wire skirt - a hitherto unseen antenna type by me, but one that I am aware of that is replacing the wire antenna installations. 30-watt (listed) ONO gets out very well, often mixing with RO Roswell, New Mexico - once the two beacons are surrounded/buried by the slow-speed digital data sounds of the DGPS system, as both aeronautical beacons reside in the marine sub-band of 285-325 kHz. Happily, in early 2018 305 ONO and RO (Roswell, NM) mix together as always in the clear now that all but the USCG DGPS beacons have left-air. I am not sure if ONO's signal level changed when the antenna replacement was made in the early 90s - it was a good signal back in 1988 and earlier, too. (February 2019: Still on-air and now in the clear again now that the 305 kHz Bakersfield USDOT-DGPS station is off-air). (This antenna would make a fine LowFER beacon installation!). S. McGreevy, 9/93.



366 PLV - Wilsonville, Oregon (McGreevy, 3/88)

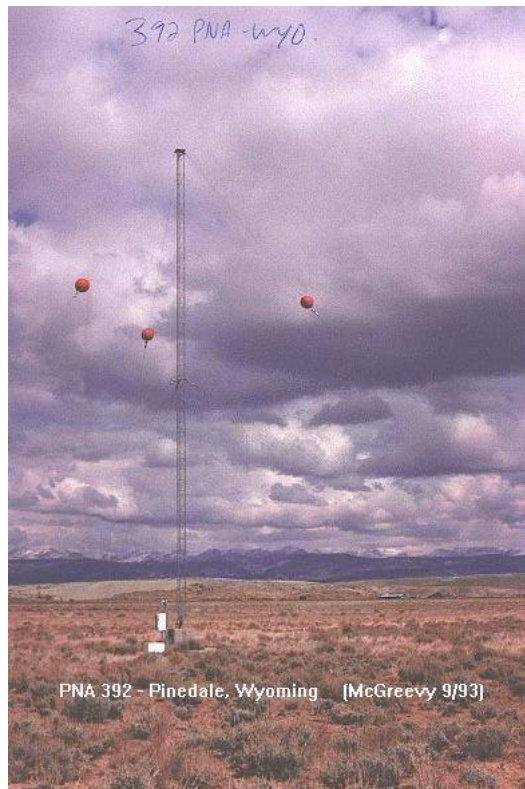
(former) 366 PLV, Wilsonville, Oregon. PLV was easily spotted on Interstate 5 about 30 miles south of Portland in 1988 and a pass-by in 1990. This beacon employed a guyed steel-lattice mast and 7-spoke top, capacitance hat without the skirt wire. I have not seen this particular variation of an NDB antenna before. Please see next photo below, too. S. McGreevy 3/88. PLV366.jpg, 27,548 bytes.

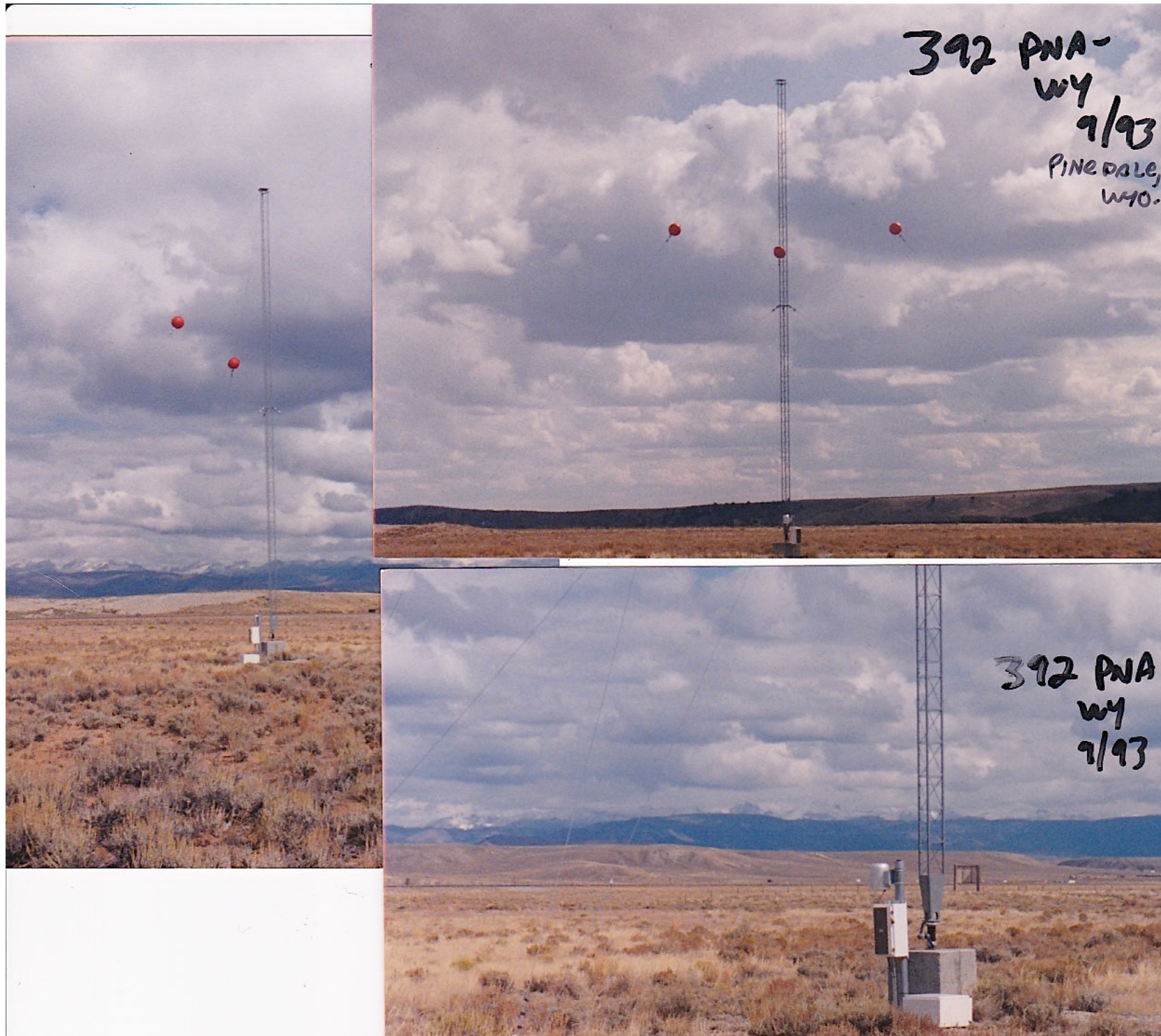


366 PLV - Wilsonville, Oregon. Transmitter, tuning network enclosure and antenna feed (McGreevy 3/88)

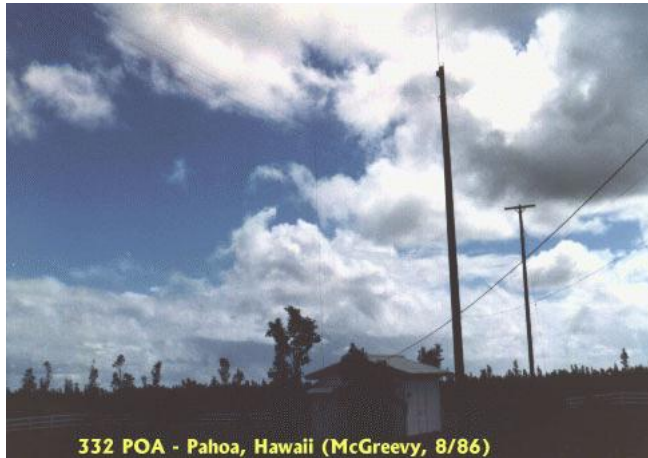
(former) 366 PLV, Wilsonville, Oregon. This is a view of PLV's transmitter enclosure and heatsink, the feedline to the tuning system and antenna mast feedline. The antenna was shiny and new, but the transmitter box looked vaguely familiar - indeed, I had been told back in Burns, Oregon earlier that week that the old 396 BNO (off-air now, replaced by a VOR) beacon transmitter was now in use at PLV! (Sheldon Remington and I had visited BNO back in May 1984 when it was on the air still). S. McGreevy, 3/88. PLV366B.jpg, 31,385 bytes.







392 PNA, Pinedale, Wyoming. I like PNA - it is often atop the 392 mixture that was 392 kHz for along time. Back on sometime around 2020 after periods off-air, and now quite 'alone' on it's frequency (happily!) in the West. For years, 392 PNA was always one of those beacons I wanted to visit someday, and so Gail and I on our big road tour of September 1993 detoured a bit off the more direct highway to Jackson Hole and Yellowstone Nat. Park to visit PNA. PNA was right at the airport in an adjacent field. The beacon used a steel lattice mast, guyed, but with the top third of the three guy cables acting as a top capacitance hat/umbrella. PNA is new variant of an NDB antenna configuration I'd never seen before in the U.S. The gorgeous Wind River Range is in the far distance. S. McGreevy, Sept. 1993. PNA392.jpg, 45,174 bytes. (Noted still OTA in 2021! PNA went off for a spell around 2010 or so, and I lamented its loss, but perhaps somebody there saw this and it compelled them to resume PNA!) LOL!







- 332 POA, Pahoehoe, Hawaii. POA really belts out a big signal from the Big Island of Hawaii - nothing like 353 LLD, Lanai, but pretty good anyway - heard easily from coastal North America and even inland when conditions are good to the Pacific. 332 POA is situated just off of the Pahoehoe Highway, halfway between Keaau and Pahoehoe (Hawaiiin Paradise Park), and uses a three-wire flat-top antenna, fed by one vertical wire to the center wire of the flat-top

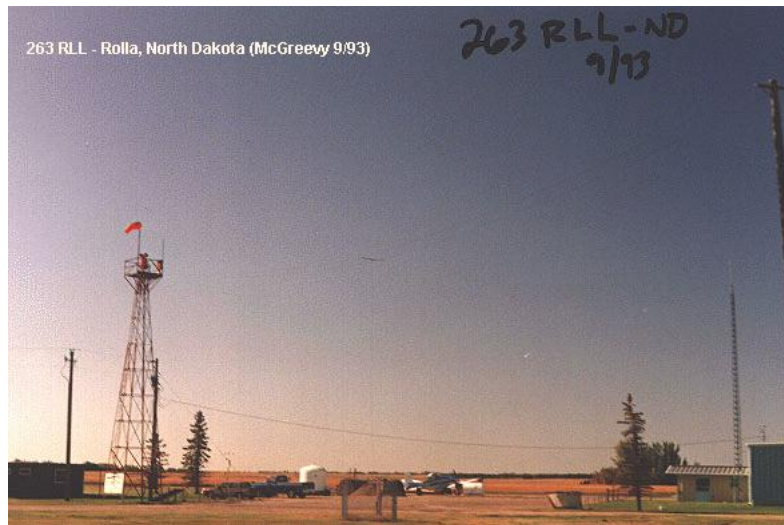


332 POA - Paho, Hawaii (McGreevy, 8/86)

portion, supported by two wooden poles. This second photo of POA is of one of the pole supports and the end of the three-wire flat-top section. Both photos by S. McGreevy, 8/86). (POA may have a new umbrella antenna by now as I think I can see in GoogleEarth in 2018).

[POA 332 Paho, Hawaii \(lsb 331.0 kHz\) recorded 20 April 2007 at 1130ut - A quick recording of one POA ident made while accidentally moving the revr. dial - Kenwood R-1000, 600 ft. wire aimed southwest, recorded at my home near Lone Pine, Calif. an an Olympus digital voice recorder. \(98 kb\)](#)

About 353 LLD - Lanai, Hawaii: Reception in Keeler, CA in Owens Valley (near Lone Pine, Calif.), using 600 foot. wire to southwest from my rural home has bagged me LLD every morning past 1000 ut (to near local sunrise) since 19 April to 22 April, 2007 very strongly - NOTE - LLD is now, for some reason, double-sideband 420 Hz modulation pitch - making them in the clear for DXers generally - check 353.42 kHz or 352.58 kHz - they are a powerful signal capable of penetrating well inland into North America, and all over Pacific Ocean (in the years past and up to 2016 LLD is very widely heard. Audio file of LLD is below - steve mcgreevy 24 april 07 and Feb. 2014. (Heard hemispherically in 2018 even).



263 RLL - Rolla, North Dakota (McGreevy 9/93)

(former) 263 RLL, Rolla, North Dakota. Friend (from University) Gail and I van-camped (the evening after visiting Omega-D North Dakota) in a field about 10 miles north of Rolla, and about 10 miles south of the Manitoba, Canada border. The next morning, (September 21, 1993) I remembered that Rolla had an NDB, and scanned the Sony, finding RLL,

though it seemed really weak for being so close - almost as weak as some of the large Canadian NDB's 500 miles away! So we rolled southward toward the airport hoping to spot the beacon, and here it was. It is a rare catch in California (as it radiates poorly). One end of its two-wire flat-top antenna is supported by the airport light-beacon platform. S. McGreevy, 9/93. RLL263.jpg, 32,678 bytes



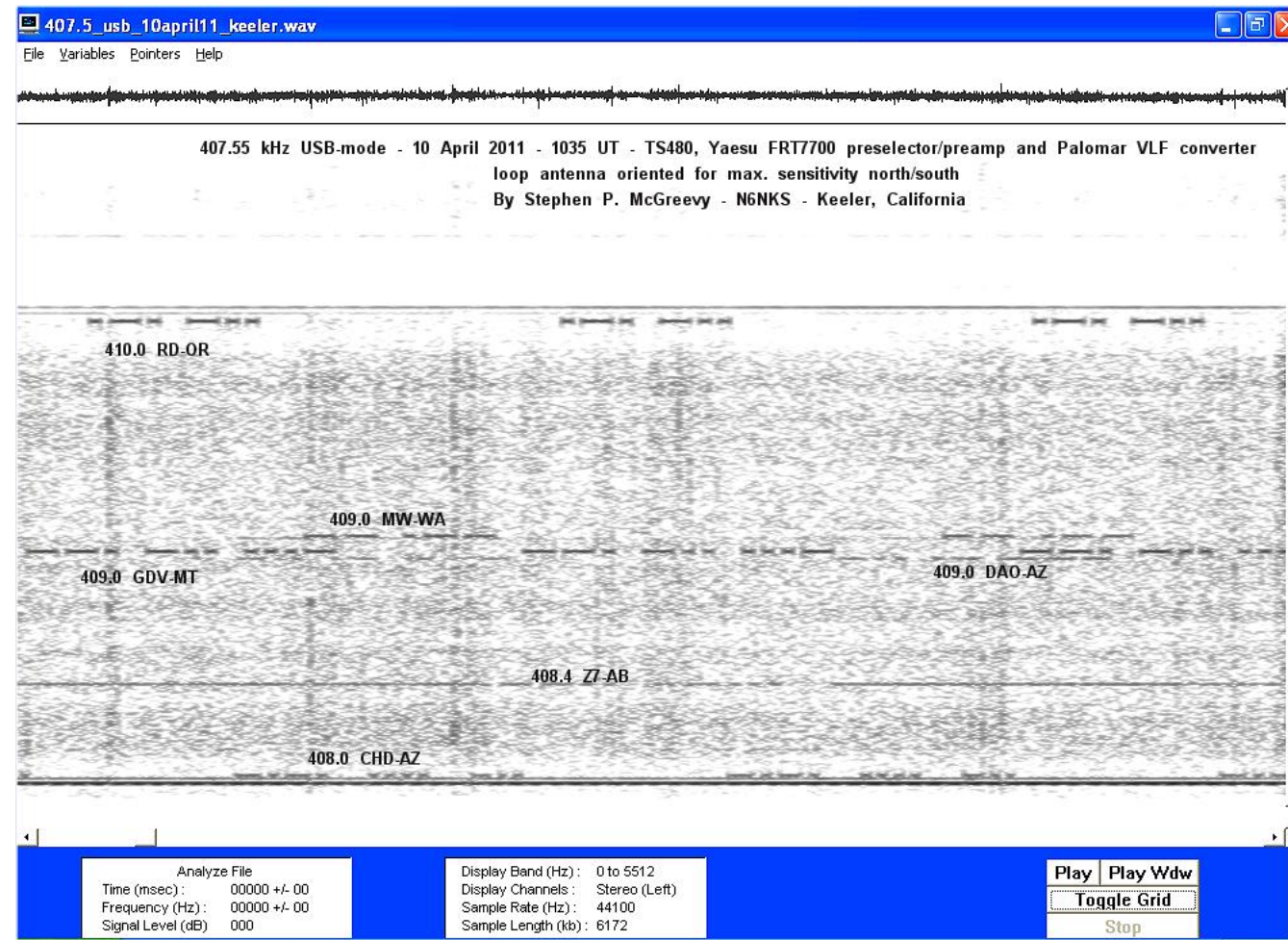
(former)222 MY Marysville, California. Sheldon Remington, John Seamons and myself DFed this beacon on our final day of a long, two state trip to

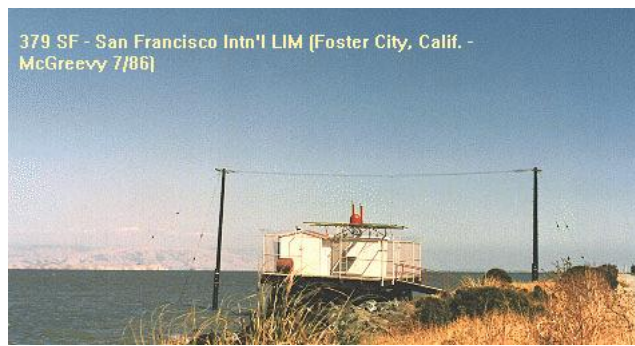
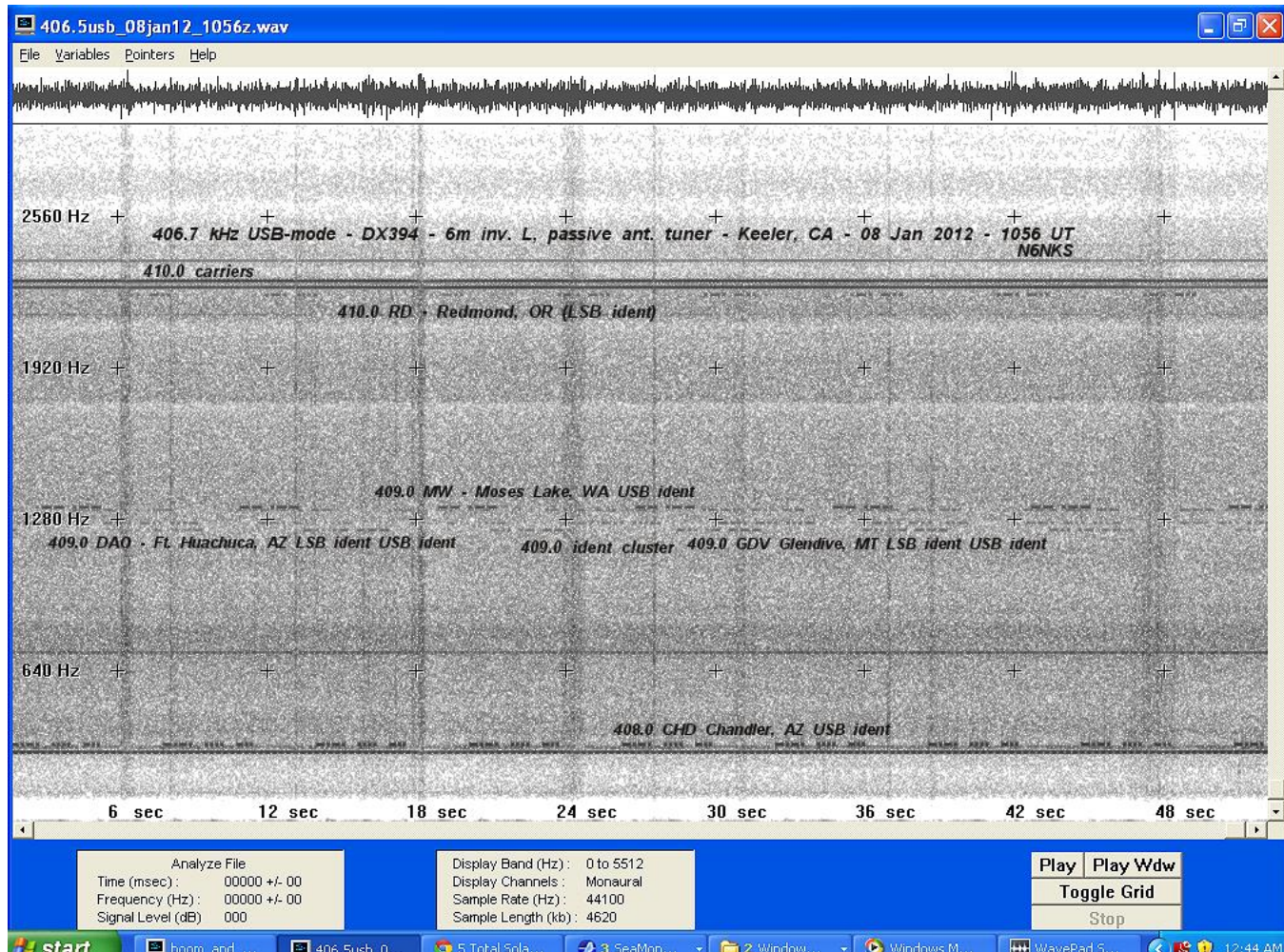


photograph NDB's. McGreevy June 1985. We then went down to the Sacramento area and visited

356 SA Sacramento Photos from Slides June 1985.







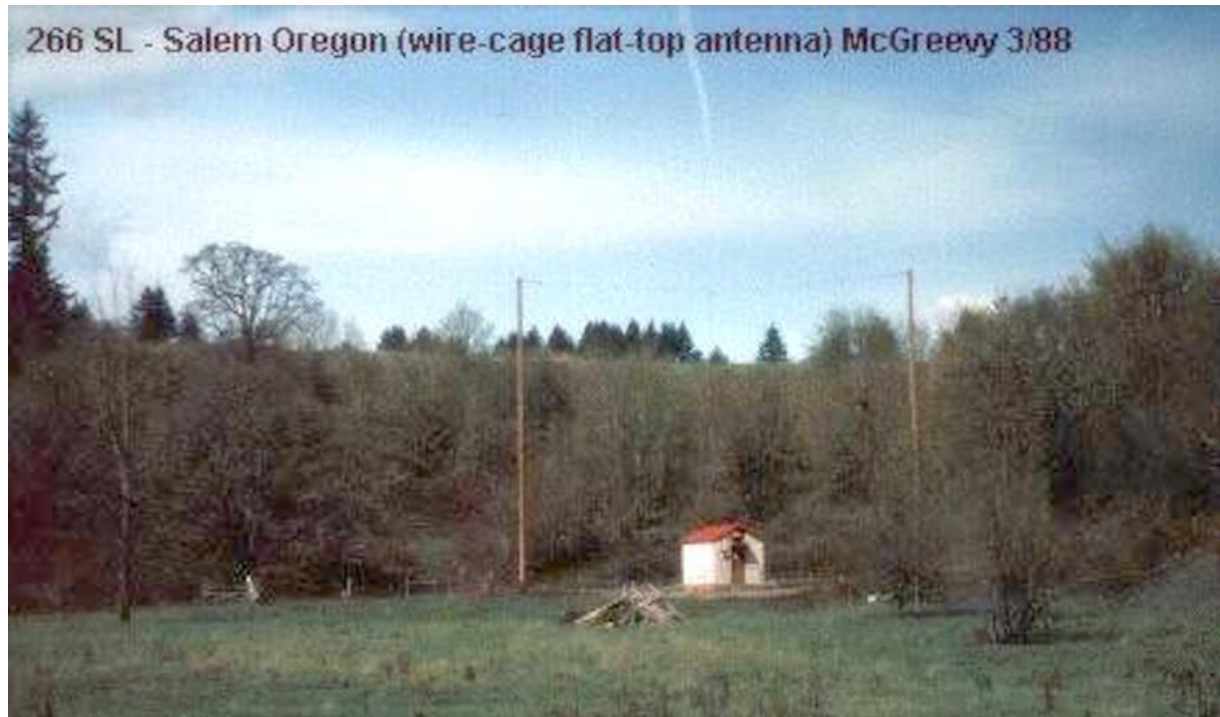
(former) 379 SF, San Francisco International LIM (Foster City), California.





The former 379 SF was a (literally) bayside beacon right south of the western on-ramp to the San Mateo Bridge. SF, back in July 1987 when this photo was taken, and it employed a three-wire flat-top antenna. It was an location inner-marker for the approach runways to SFO. There was also a 75-MHz marker installation and dipole antenna along with the SF beacon. This photo was taken right before I dropped Sheldon Remington (ex. NI6E/ now KH6SR) off at the airport (SFO) the day he was moving to Hawaii. S. McGreevy, 8/86.





wire-cage T-configuration antenna.

(former) 266 SL, Salem, Oregon. SL was another unusual installation, employing a



3/8/23, 8:00 AM

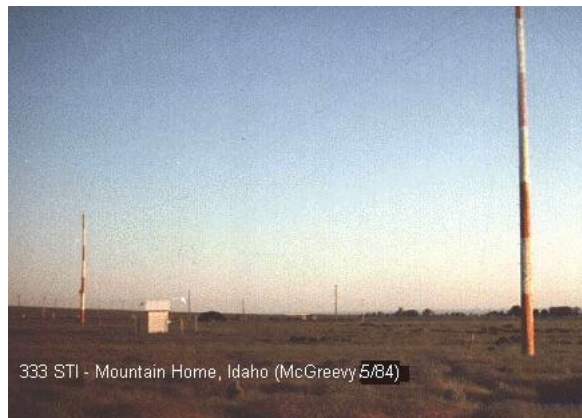
Non-Directional Beacon (NDB) Photo Gallery 1984-2018 - Stephen P. McGreevy, N6NKS

The actual location is just on the north edge of the small town of Turner. S. McGreevy, 3/88. SL266.jpg, 18,056 bytes. In September 2009, Don Montgomery, K6LTS sent a (lost) updated SL photo showing a new vertical with 16-spoke top-capacity hat similat to 306 ONO Ontario, Oregon's NDB.



3/8/23, 8:00 AM

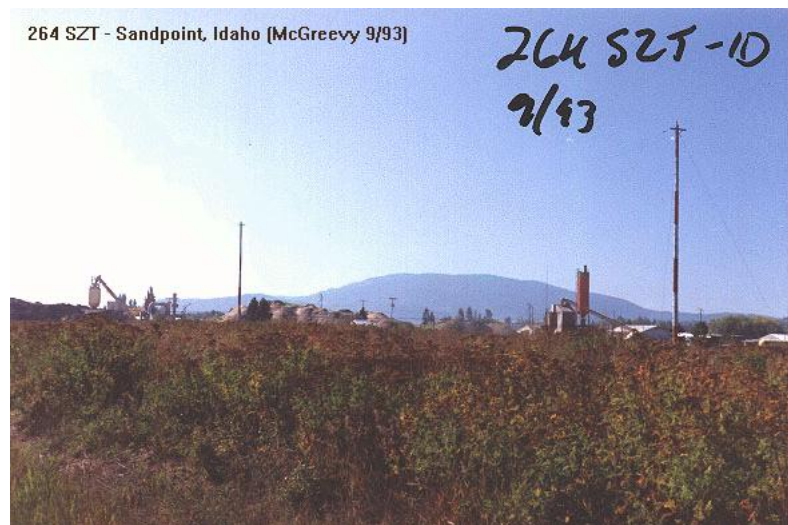
Non-Directional Beacon (NDB) Photo Gallery 1984-2018 - Stephen P. McGreevy, N6NKS





- 333 STI Mountain Home, Idaho. Back in late May 1984 when this (Kodak 110-film!) picture was taken with a poor-quality 110-type camera, STI used a large two-wire flat-top wire supported by two wooden poles painted red

and white (very similar to 374 BKU Baker Montana above and many older NDBs you see pictured herein). The antenna look a bit dilapidated when Sheldon and I visited STI, and one of the two vertical wire feeds to the flat-top section of the wire antenna was broken. STI still is on the air but with a somewhat reduced signal since the early-mid 1980's, and I presume the antenna has ben replaced/updated. S. McGreevy, 5/84. STI333.jpg, 21,190 bytes.

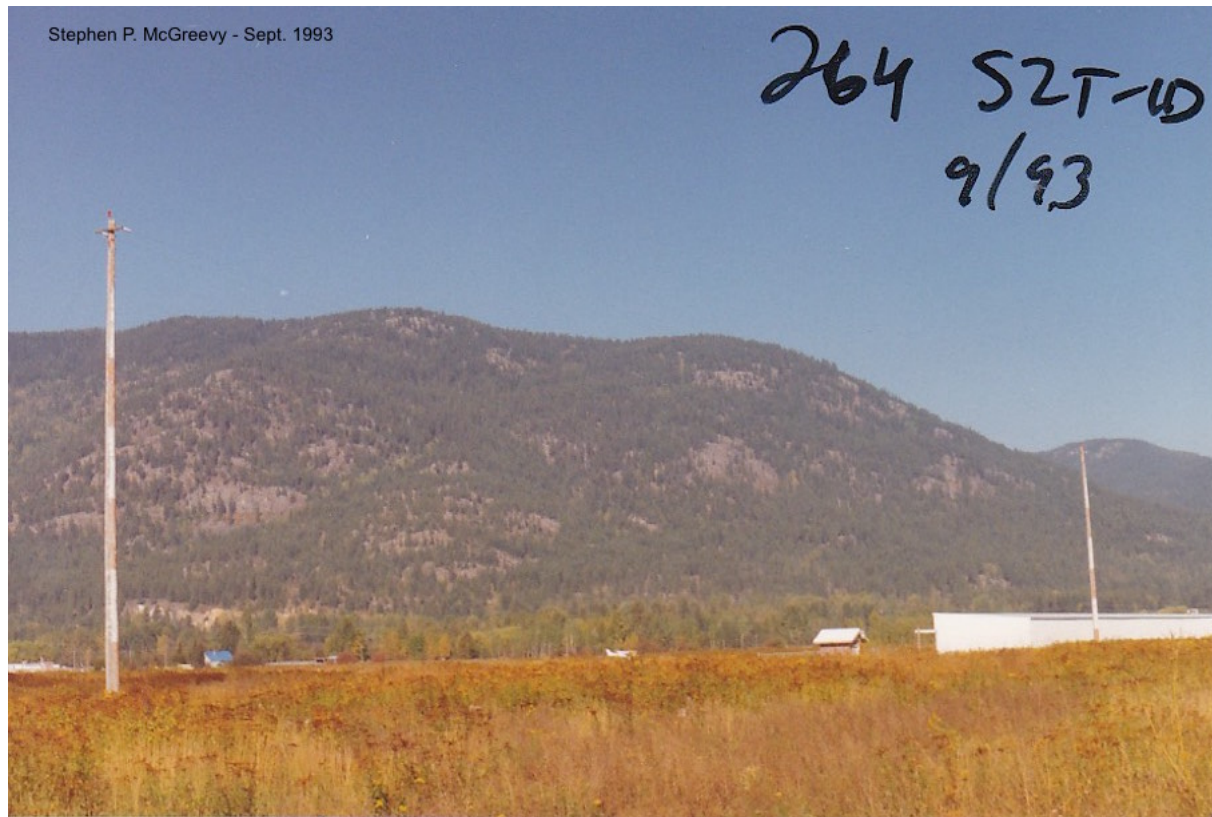


264 SZT Sandpoint, Idaho. SZT uses a large wire antenna supported by wooden poles - again similar to STI and BKU. S. McGreevy, 9/93. SZT264.jpg, 45,111 bytes.

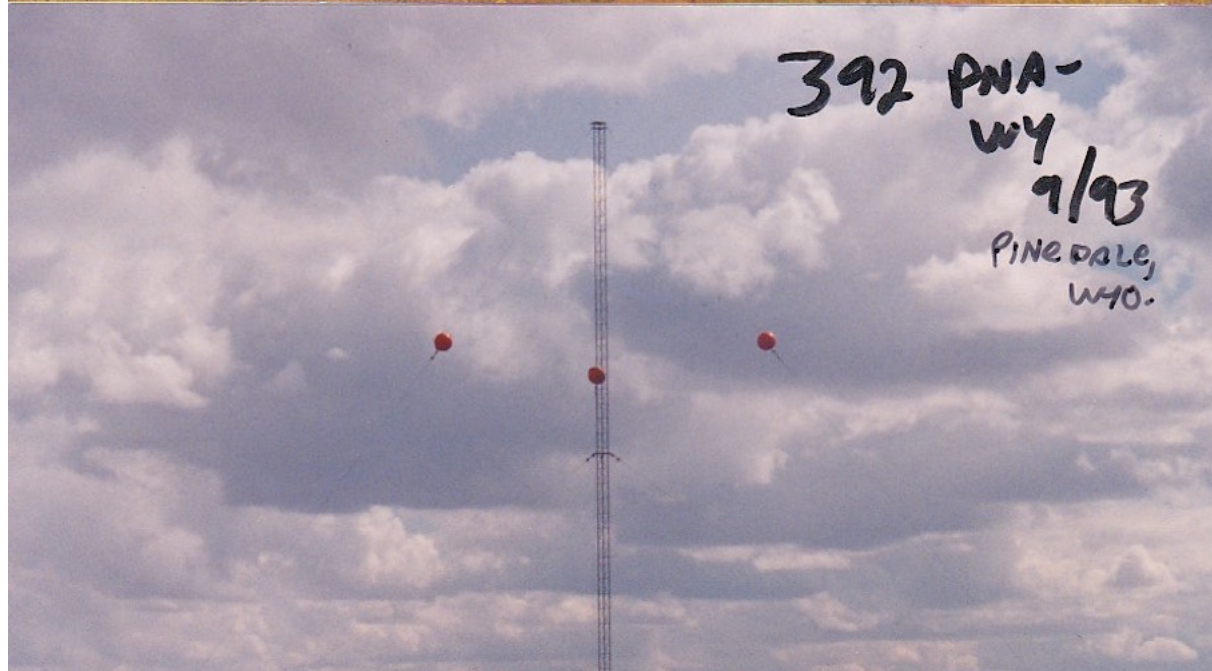


Stephen P. McGreevy - Sept. 1993

264 SZT-W  
9/93



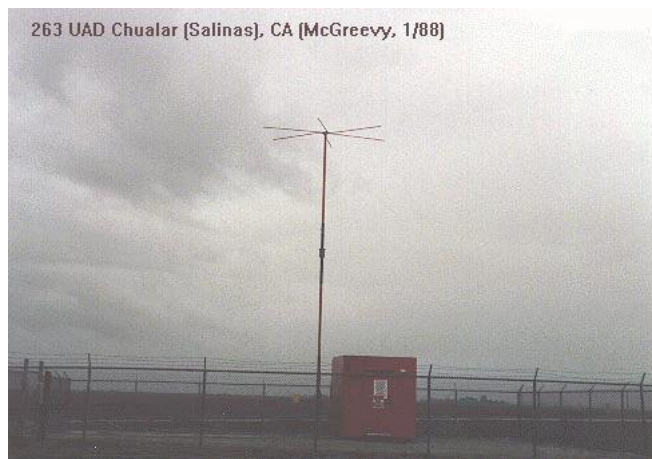
392 PNA-  
WY  
9/93  
PINE DALE,  
WYO.





**245 TLR - Tulare, CA. Photo by John Headlee summer 1987**

(former)245 TLR, Tulare, California. This photo was taken by John Headlee, (formerly N6NRK) taken sometime July 1987. He didn't get closer to the NDB than this photo, but it looks like TLR uses steel-lattice masts supporting a one or two-wire flat-top antenna. TLR245.jpg, 23,814 bytes.



(former) 263 UAD, Chualar (Salinas), California. UAD uses a standard, 25-watt FAA tubular mast with center-loading coil and 6-spoke umbrella top cap. hat. S. McGreevy, 1/88. UAD263.jpg, 24,669 bytes.

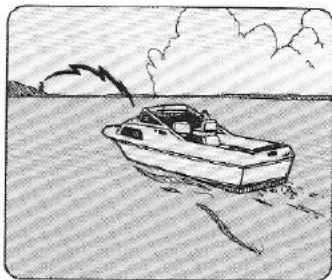


(former) 324 U Umpqua River Mouth, Oregon (former marine NDB). "U" was a tiny beacon - listed as 10 watts and under trees which really dampened-down its signal(!) - formerly located in the parking-lot next to the mouth of the Umpqua River in Oregon. Marine beacons like these tiny gems have all been removed from the former marine beacon sub-band 285 to 325 kHz, replaced by the DGPS beacon system, which is a whole-lot more unromantic than these old Marine-marker beacons (or the fascinating-sounding sequenced beacon chains like W 304 right below) were. Photographed March 1988 - S.P. McGreevy.



## RADIOBEACONS

### FACTS & FIGURES

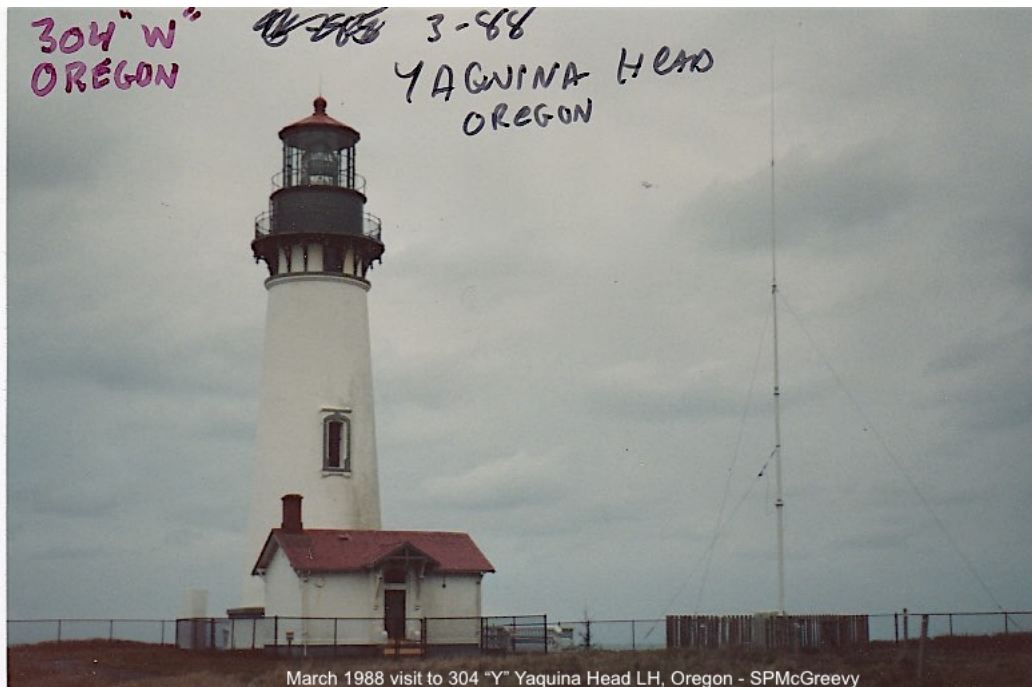


*Simple, low cost,  
widely available  
and reliable  
radio aid to navigation*

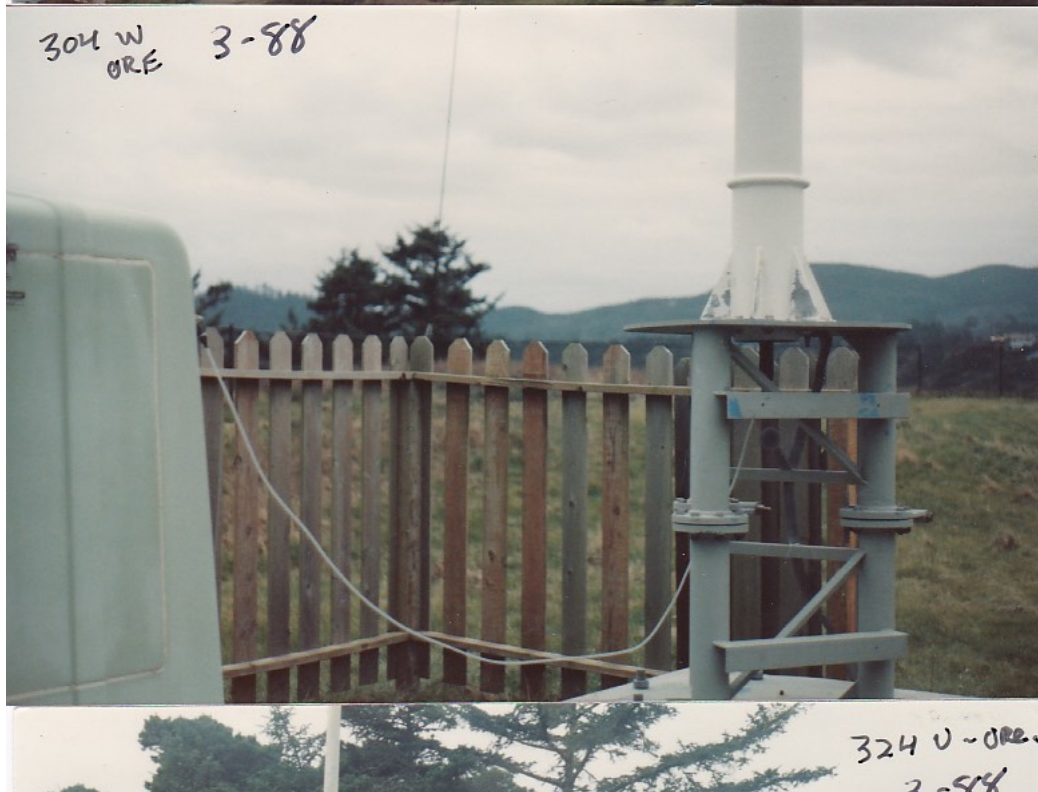
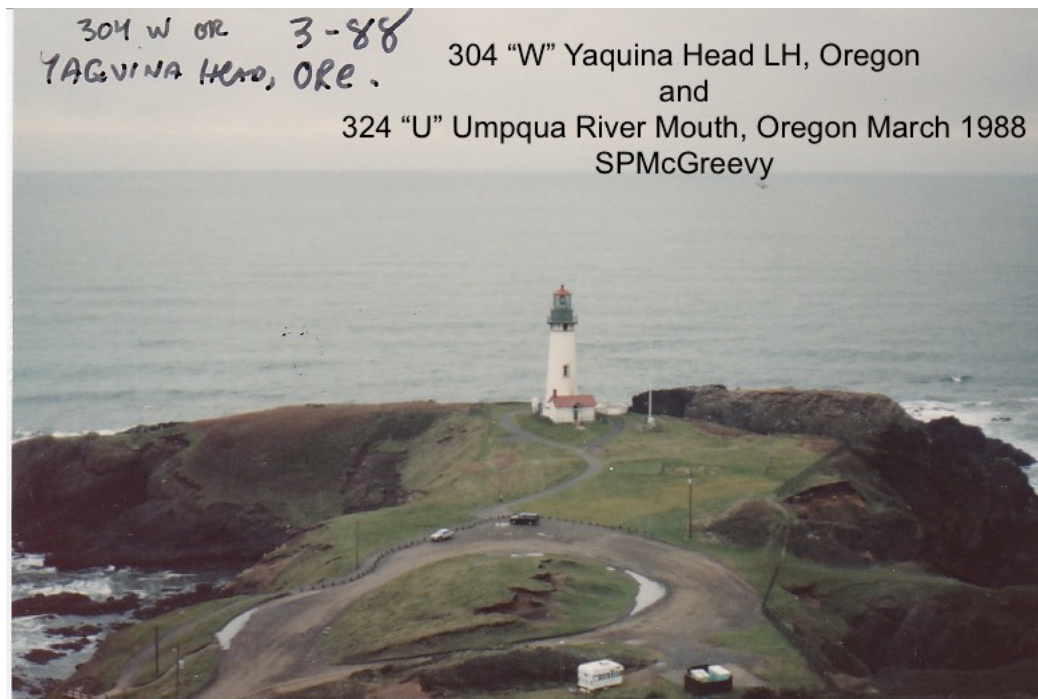
U.S. Department  
of Transportation  
United States  
Coast Guard



1980s USCG brochure about marine NDBs



March 1988 visit to 304 "Y" Yaquina Head LH, Oregon - SPMcGreevy



(Former) 304 W, Yaquina Head Lighthouse (former marine NDB). "W" was one of three 304 kHz, 50/10-format-marine-sequenced beacons on the Oregon Coast. It had higher power than the other small harbor marker beacons shown in the pictures on this page and employed a taller whip antenna. Nice photo of the Yaquina Head Lighthouse (taken in damp weather). This beacon is off the air, as is the former 324 U Umpqua River Mouth station beacon, too. S. McGreevy, March 1988.





Fascinating note from Mark (AF6IM) about navigation using these former MARINE NDBs:

Stephen,

I really like your natural radio website a lot. You might want to include a link to my website (link at top of page) which has first hand information on using NDBs in California for commercial fishboat navigation:

<https://sites.google.com/site/boeing377/using-military-surplus-radio-gear-on-commercial-fishing-boats>

There was an extra feature on the Pt. Bonita NDB (and perhaps others) (the former 296 "B" Point Bonita Lighthouse beacon in Marin County - SpM) that allowed you to compute range in fog. All you needed was a stopwatch and a DF. The beacon was synched with the foghorn. You'd use a stop watch to measure the delay between arrival of the beacon tone and the foghorn and a simple speed of sound calc gave you range. I think I was perhaps the only person who actually used this in the 60s, but it was quite accurate and gave me position info at a critical point, entrance to S.F. I learned about it in some obscure pub like the Coast Pilot. It wasn't very obvious from reading the nav charts.

I was sure sad to see the low power USCG local harbor NDBs disappear. I used them at Bodega Bay and Santa Cruz. Super useful for harbor entrance nav before GPS. They worked GREAT.

Excerpt from my website: Manual RDFs were really hard to use accurately on a boat that was often yawing pitching and rolling. I longed for an ADF (such as the Bendix 555 or Jeppeson units), and an abundance of cheap surplus ARN 7 gear allowed me to get one dirt cheap. I liked ADF navigation and used it to full advantage. There was an AM broadcast station in Ft Bragg CA (KDAC 1230 with 1 kW - SpM) with a tower sited right on the coast that gave a very sharp-null which enabled me to always find the Noyo River entrance buoy even in pea soup fog. I'd start in slightly deeper water to avoid trouble, find the correct DF bearing that you'd see from the buoy and then ride the bearing into the charted depth that the buoy was anchored in. Bingo every single time even in nearly zero visibility.

The loop compensator allowed you to zero out nearly all bearing distortion from the boats extensive metal commercial fishing rigging. It took some work to calibrate it properly but when set up right it worked like a charm. It was a brilliant design using a circular spring steel strip cam that you could vary the shape of with circumferentially spaced adjustment screws. The cam follower drove the loop selsyn and gave you corrected bearings on the I 82 indicator.

73,  
Mark  
AF6IM  
[www.parachutemobile.com](http://www.parachutemobile.com)

THANKS MARK! SpM

---

TST/OVE 212 Oroville, CA - March 1985 - McGreevy (from slide)

**A day spent DFing the  
previously unID TST 212  
which turned out to be at  
the Oroville, CA airport**



Where is TST? (DFing) March 1985 - McGreevy

TST/OVE 212 Oroville, CA - March 1985 - McGreevy (from slide)



McGreevy Remington NI6E/KH6SR

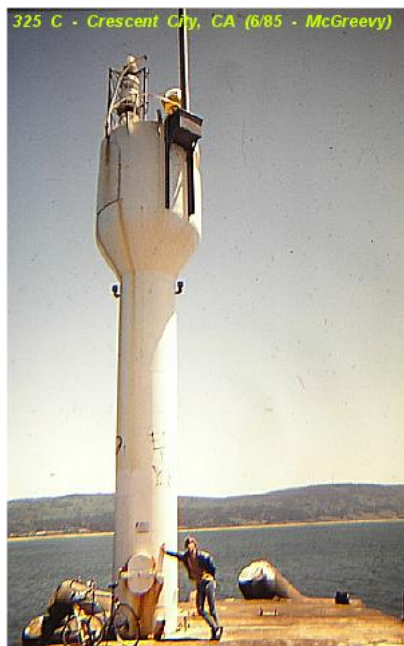


(former) 212 TST/OVE Oroville, (northern) California.

Three fuzzy images from slides of a Dfing trip Sheldon Remington and myself undertook on a gorgeous and sunny spring day in mid-March 1985. We had heard an unID beacon on 212 kHz sending "TST" for months prior to the trip, and long-distance loop bearings (from North S.F. Bay Area) pointed toward Oroville, but also toward a few other small airports in the northern Sacramento valley (colusa, etc.), and so we took a trip to find TST. After a day of enjoying the beautiful scenery and spring greenery along the way, we located TST at the Oroville airport. Close-in DFing was accomplished using only the loopsticks of two Sony ICF-7600D portable receivers. Later that day, TST went off the air (we did meet airport personnel inquiring about this beacon so they must have not known it was going and switched it off!). It later returned to the air for a few years as ident OVE. Photos by S. McGreevy March 1985.

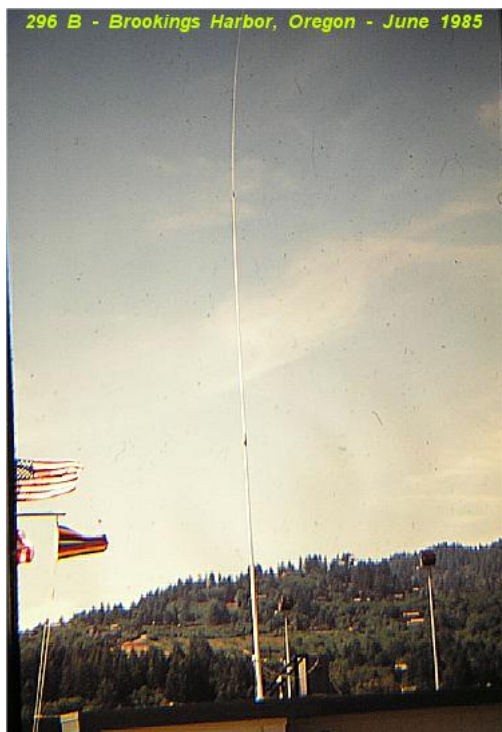


(former) 325 BO - Bodega Head, California - This is a former, moderately powerful 50/10 marine marker-beacon located high and clear atop Bodega Head near Bodega Bay- shown on charts as also an aeronautical beacon. Sheldon Remington is perched on its fence - S. McGreevy June 1985.



325 C - Crescent City, CA (6/85 - McGreevy)  
(former) 325 C - Crescent City jetty, California. This former 50/10 marine harbor-marker beacon was situated at the end of a jetty near Crescent City Harbor. The beacon was housed in the grey enclosure seen at the top of the light platform, and employed a 30-foot tall whip antenna w/o capacitance hat antenna. Photo from a slide, June 1985. (Unknown young man visitor at base of platform.) The next beacon we visited is 296 B Brookings, Oregon (see next).

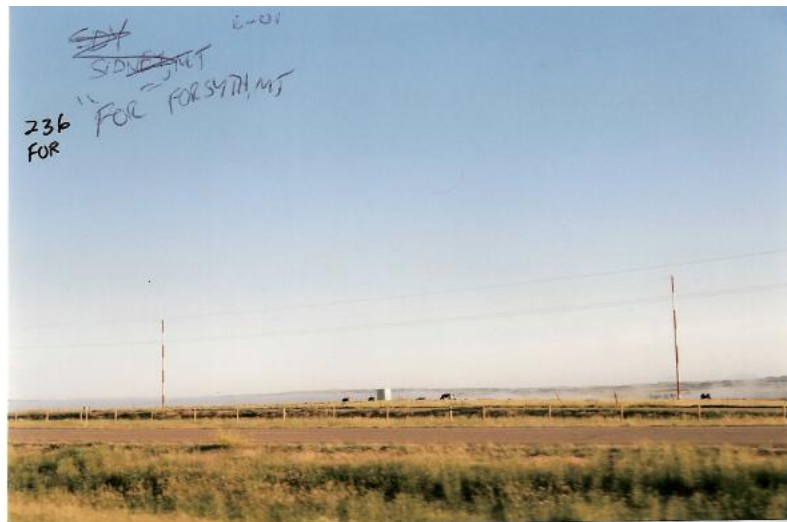




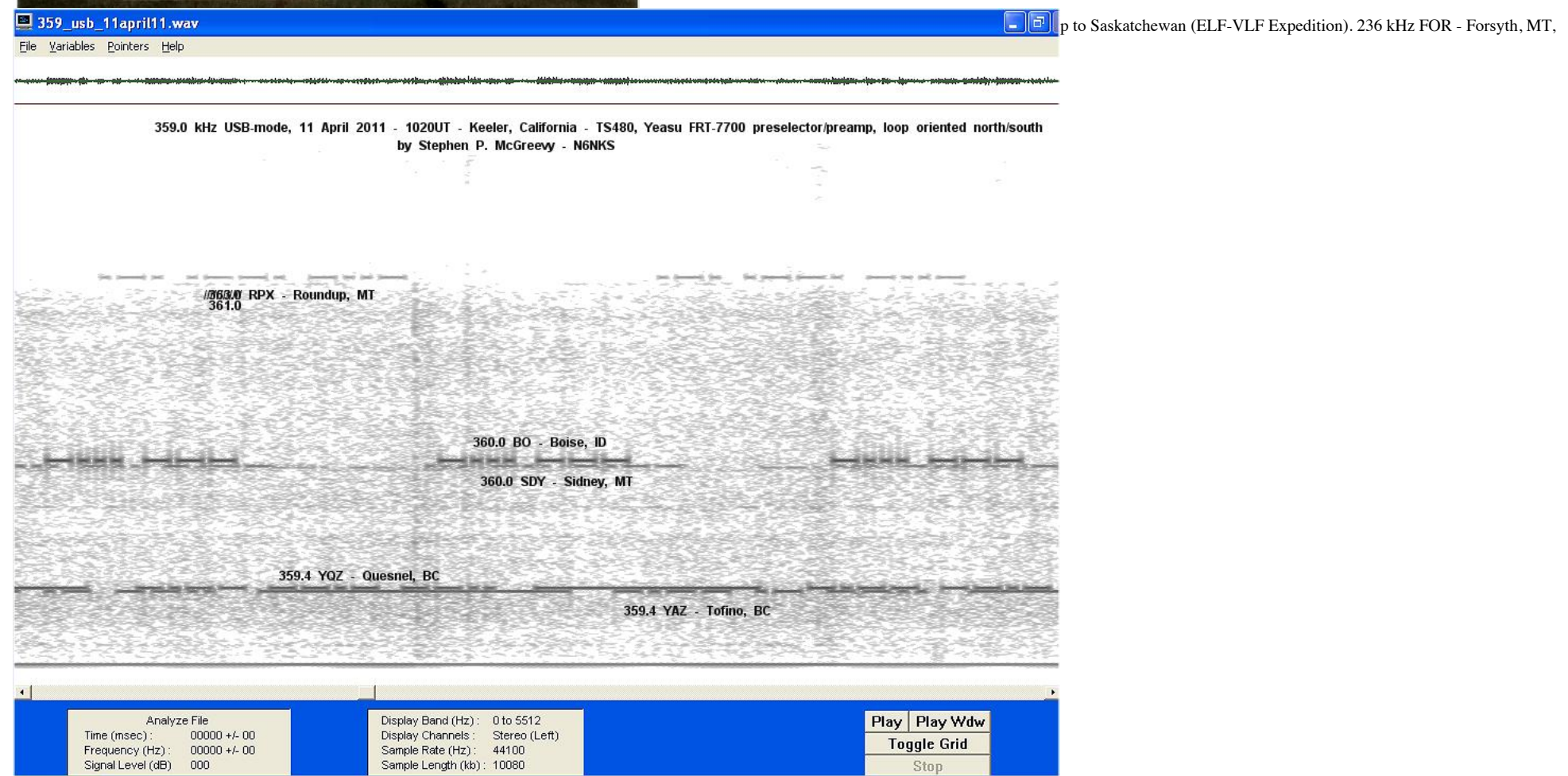
(former) 296 B - Brookings Harbor, Oregon - This is another former, small 50/10 marine marker-beacon located at the USCG station in Brookings Harbor employing a whip antenna. Photo from slide - S. McGreevy June 1985. The next beacon we visited is aero-beacon 396 GOL Gold Beach, Oregon (below).



(former) 396 GOL - Gold Beach, Oregon. GOL looks similar to a few Montana beacons presented in this page with red-and-white painted wooden pole supporting a T-type wire antenna. Photo from Slide, June 1985 S. McGreevy



next to I-90; 359 kHz SDY - Sidney, MT; 410 kHz GDV - Glendora, MT, mid-June 2001 - S.P. McGreevy.







347 SBX Shelby, Montana. I deviated from my trip southbound on I-15, coming back from Saskatchewan to do VLF recording. July 2001. - S.P. McGreevy. 92k high-resolution photo of T-antenna and wooden-pole supports from afar.





Nevada. I spied this beacon while driving eastbound on US 6 on my way to Great Basin National Park June 2001. I turned back, flipped on my receiver and was very pleasantly surprised to have 209 AEC blasting out the speaker - with AWOS voice weather saying "Basecamp" at each beginning of message. I have heard this for years since the late 1980's, usually mixing with HGT Hunter Liggett, Calif and a barrage of PLC's. Heard many times on DXpeditions throughout the intermountain west since 1984, and it has a fairly good daytime groundwave signal at my Owens Valley home, now w/o AWOS -- just ident only. - S.P. McGreevy June 2001, July 2007. 296 kB very high-resolution, gorgeous photos.

**201 IP - Mobile, Arizona - 26 Sept. 2006 - Kirk W.**



201 IP Mobile, Arizona

Good friend Kirk W. DFed this beacon site on 26 September 2006. IP is located about 7 miles NW of Mobile, Arizona, and is solar-powered. 193K nice-resolution photo - photo by Kirk W.

Kirk writes on 25 March 2008: I have some good news regarding IP on 201 kHz. Frank informed me that this beacon is now back on the ai (ongoing as of January 2018 monitoring - SpM.



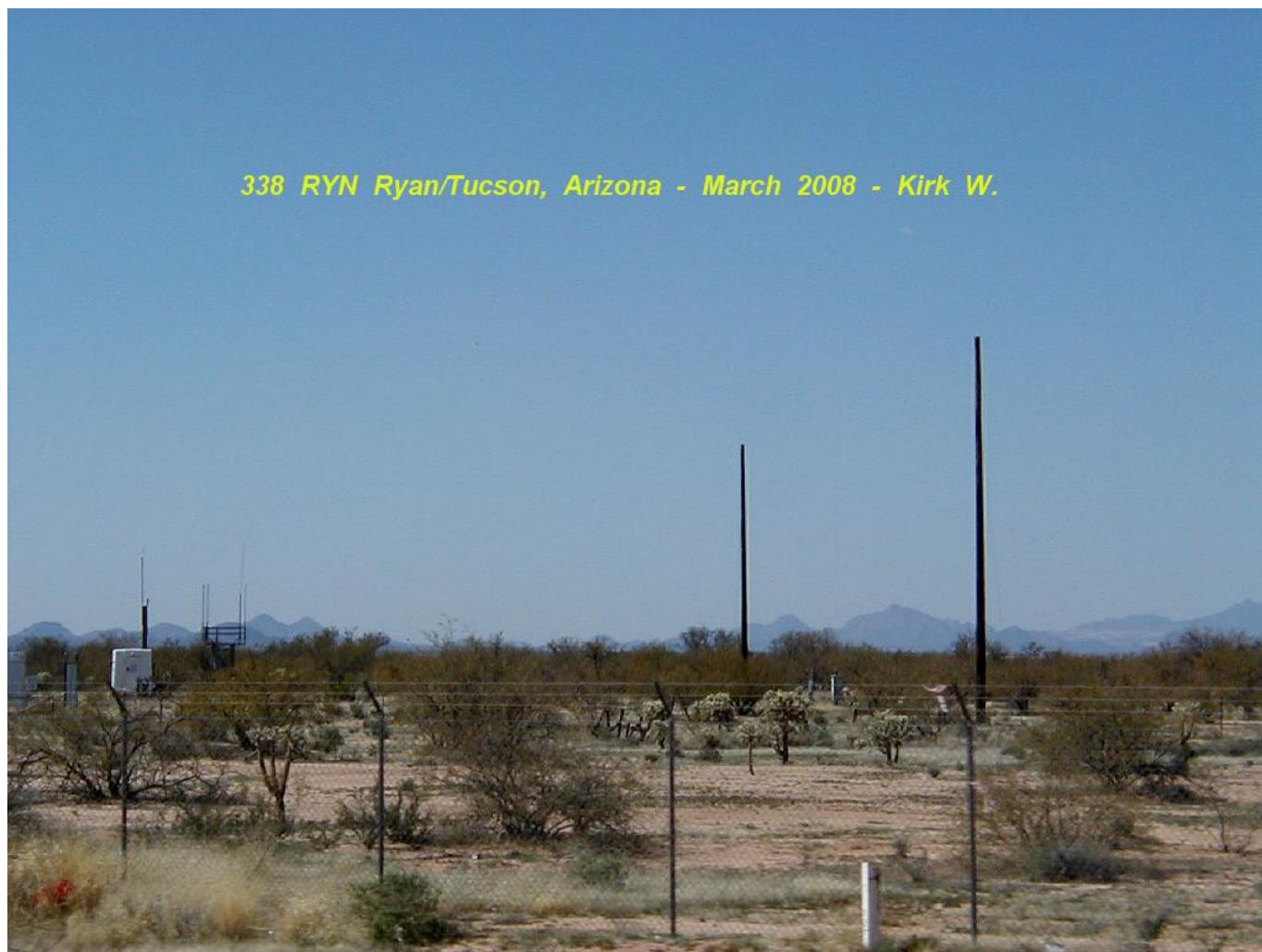
It had been off the air for several weeks but I checked last week and it was back in service. Not only that, it now appears to be on the air 24 hours daily. Formerly, it had turned off at 1900 MST every evening and remained silent all night until 0600 MST the following day.

I wonder if this had been to conserve power, as IP receives its only power from a bank of large solar panels. (I know some other beacons that are that way, too!) I observed no above-ground power lines feeding the beacon in its desolate location in the Rainbow Valley, sandwiched between the Maricopa and Estrella Mountains in a sparse Sonoran Desert landscape. Now the beacon IP operates continuously.

This shouldn't create a power shortage, as this is the sunniest time of the year in southern Arizona and there will now be more daylight than nighttime hours for the next six months. Of course, there may be unrelated technical reasons for the beacon having been QRT for a few weeks and changing its schedule. This is good news for you, as it gives you a better opportunity to hear IP during nighttime propagation conditions.

The best time for you (SpM) to listen for it would most likely be just before sunrise, when noise from thunderstorms in the east has faded down but nighttime conditions are still in existence farther west.

(K.W. - 25 Mar 2008)



338 RYN Ryan/Tucson, Arizona (Ant. wires not visible in this pic, alas! SpM) Kirk Writes in March 2008: The non-directional beacon RYN (338) is contained entirely inside the airport boundaries. As a result, access is blocked by a barbed wire fence and one can only approach the beacon within 100 yards. RYN is actually triple-protected by the barbed wire fence surrounding the air field, by a second wire fence surrounding the entire beacon's electronics and antenna structure, and by a third, small wire fence surrounding the antenna house and vertical wire that reaches up to the top hat.


Prior to seeing RYN for the first time, I was actually expecting a more substantial antenna for a high-power beacon in its special 400-watt class. More specifically, I thought I might find a red and white vertical tower of several hundred feet (such as 254 SPK; 320 HTN; 368 SX; etc. - SpM). Instead, I (Kirk W.) found a very typical aeronautical NDB installation consisting of a vertical wire suspended from a two-conductor top hat strung between two

wooden poles (rather hard to see in Kirk's photo, though).

It was almost anticlimactic. Of course, it makes sense to keep any structures at an airport as low as possible.

The two poles are perhaps 50 feet in height and the top hat consists of two horizontal wires, one above the other. The two horizontal top hat wires are parallel in the vertical, not horizontal plane (similar to 201 IP-AZ). Very high voltage insulators are used to attach the top hat wires to the support poles. A small white cubical structure lies beneath the center of the top hat and the vertical wire appears to originate from it.

Another, larger white cubical fiberglass-like structure lies 100 feet away near a VHF antenna structure. I wonder if the smaller structure contains just the tuning network and the larger structure contains the beacon electronics and its power supply. The larger cubical, boxlike structure was very reminiscent of the structure that exists at IP, 6 miles northwest of Mobile, AZ. (IP has been off the air since approximately Wednesday, February 6th, 2008. - back on - see above - SpM) RYN's antenna and top hat are basically identical in size and form to that used by IP.

SpM writes:  338 RYN once battled it out at night through the desert southwest with PBT Proberta/Red Bluff, California to the point both must have caused co-channel QRM if either beacon were employed at night for longer-distance DFing (audio file of PBT and RYN on 337.0 kHz a few nights ago around 19 March '08), which does employ a tall vertical mast antenna--I visited PBT in June 1985 - I can't find the slide however... and NOTE: PBT (formerly with TWEB) left the air around December 2012. SpM







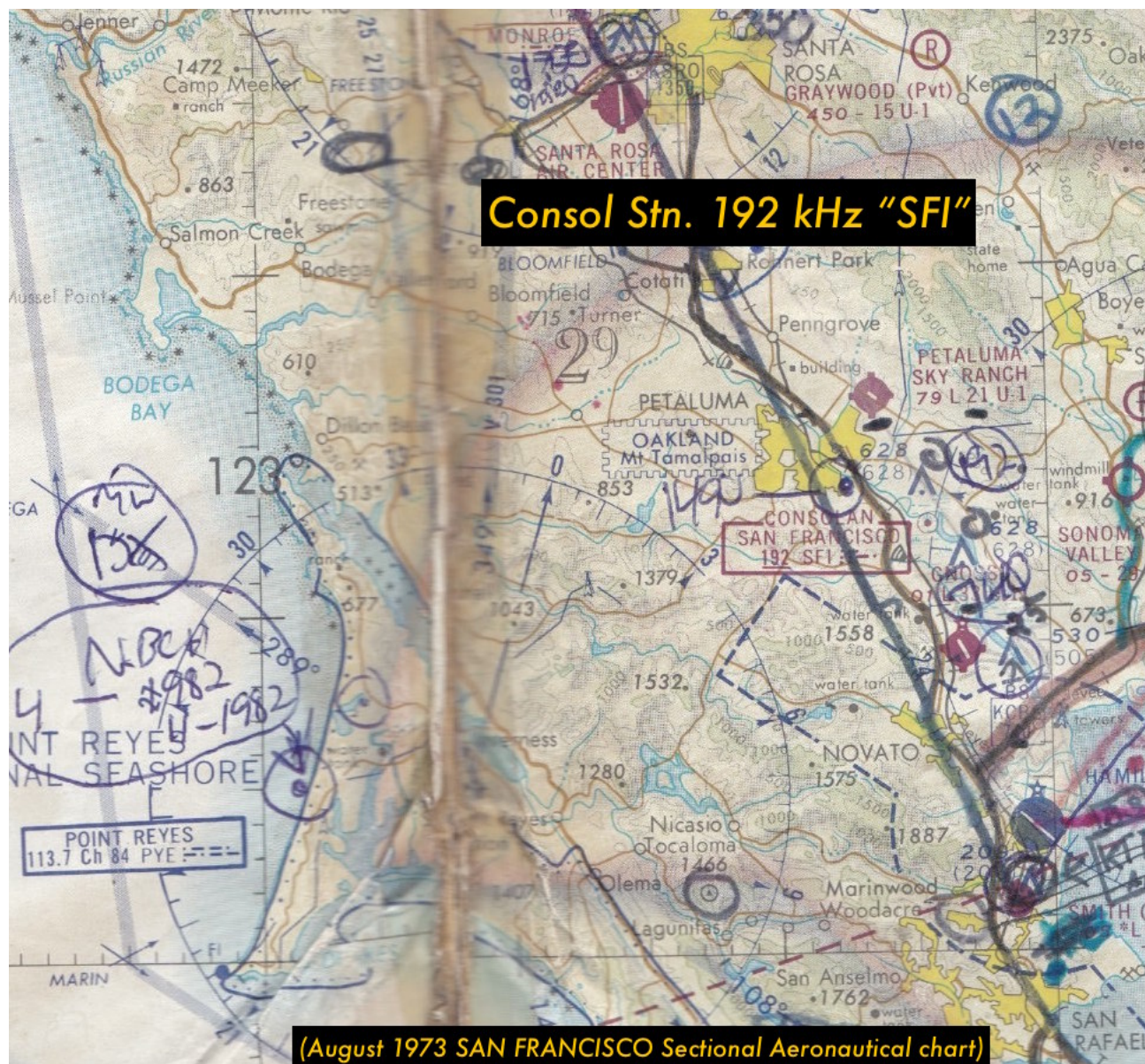


(former) 100 kHz Loran-C Master Station, Searchlight, Nevada Four towers support a large capacity-hat and vertical cable antenna suspended between them. The towers are 721 feet tall and are located about 15 miles south of Searchlight, Nevada, 5 miles east of US Hwy 95. S.P. McGreevy 08 December 2008.



(former) 298 kHz DGPS Beacon, Essex, California in the eastern Mojave Desert employs a 299 ft. mast and twelve capacity-hat wires. Located closeby the historic Old Route 66 Highway. S.P. McGreevy 08 December 2008.

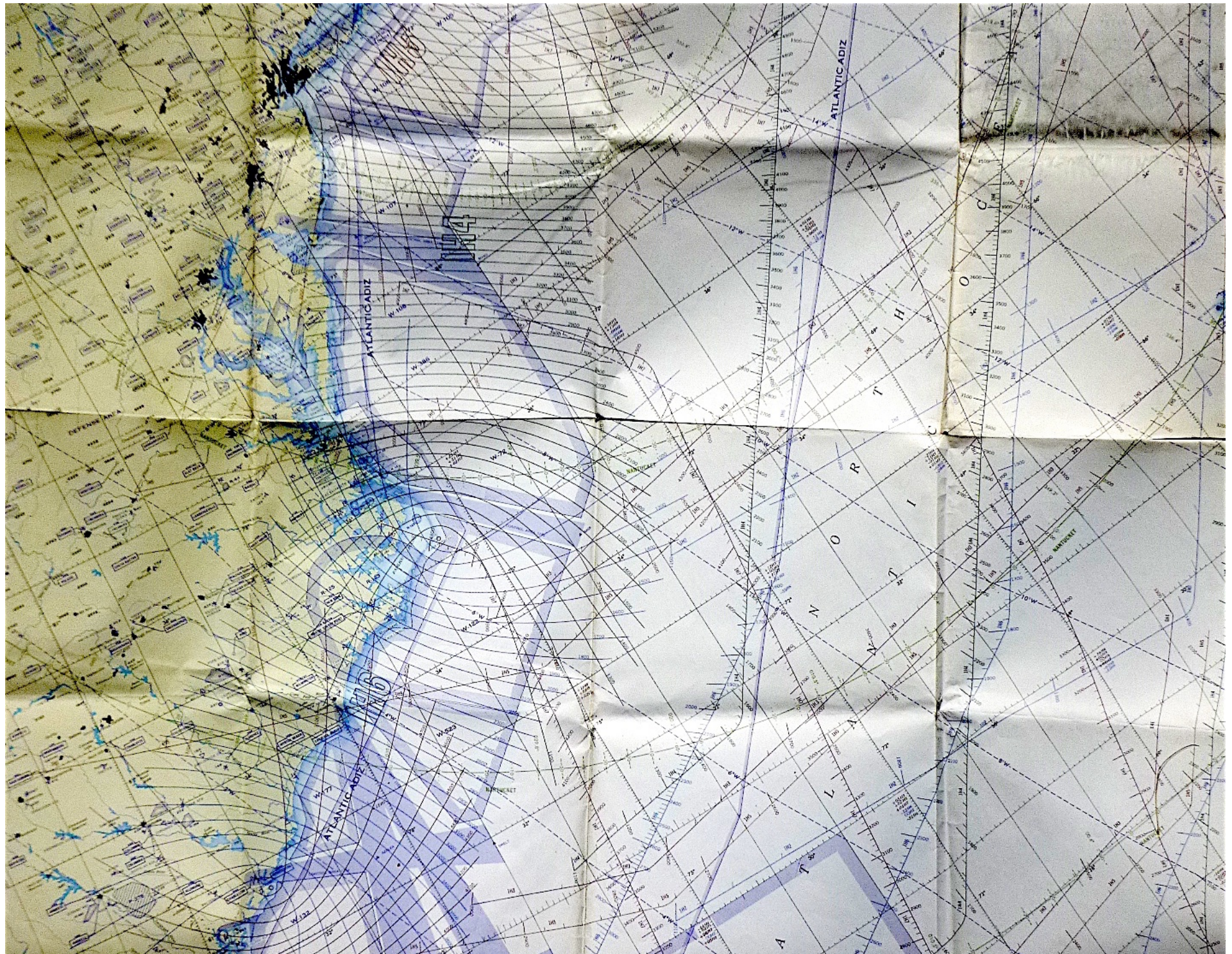




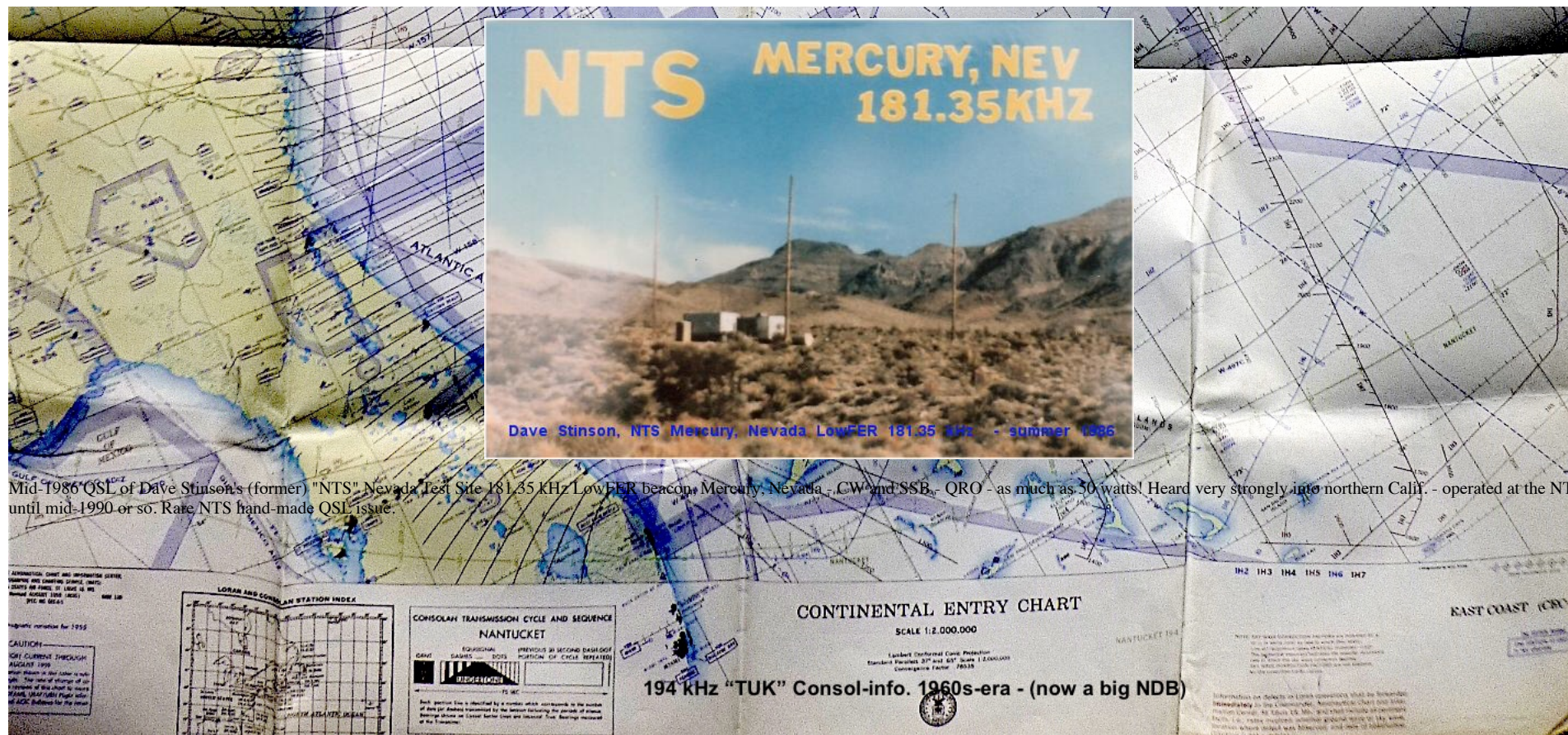




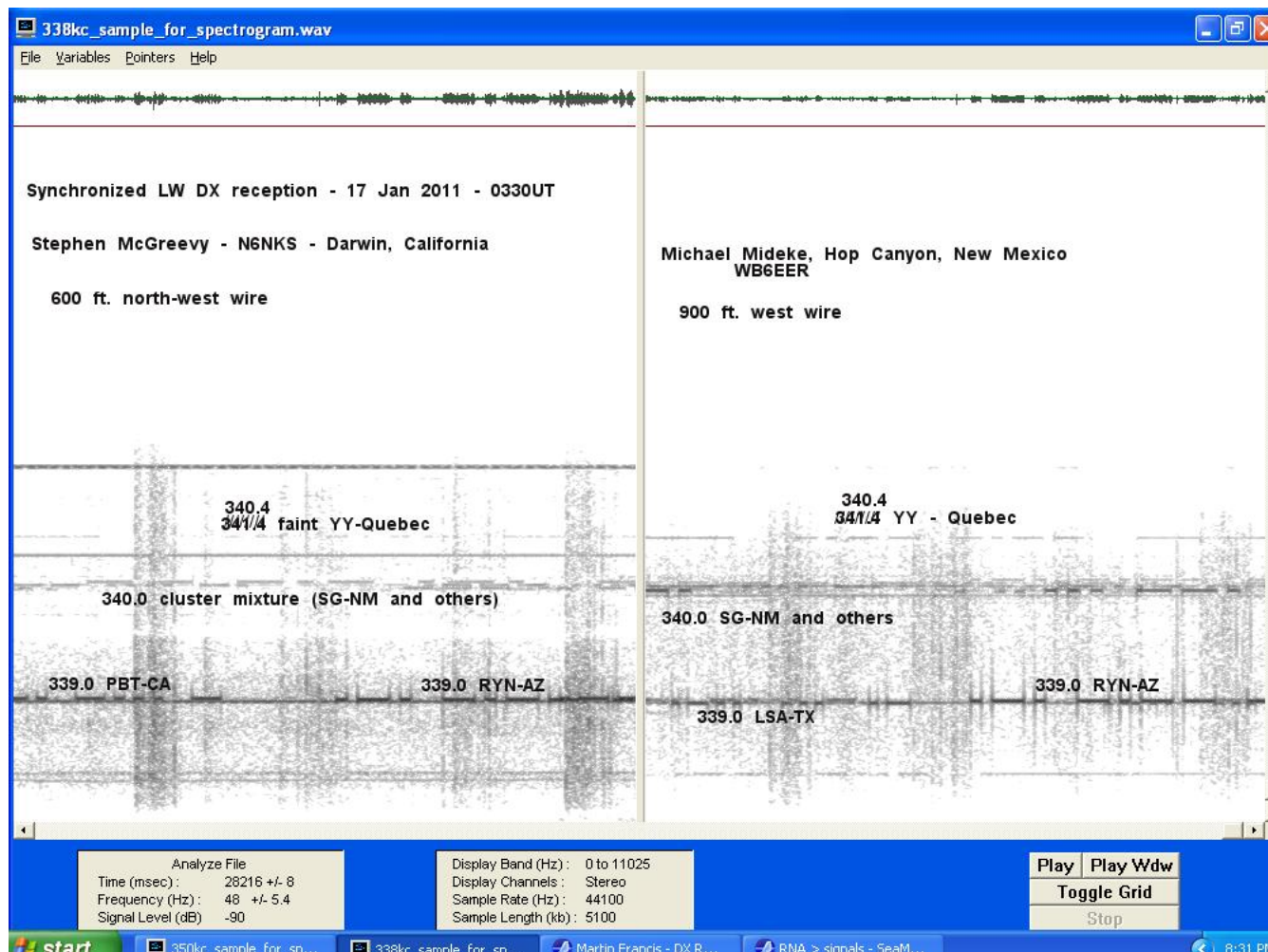












## 279 Russia FE lwbc dx

[279russia at humbolt ca coast may 93.mp3](#) My favorite, gorgeous recording of 279 Russia (Yuzhno\_Sakhalinsk, FE\_) (5.7 mb - 128 kbps MP3) recorded about 0500 Calif. time or so, sometime mid-May 1993, (bfl) Patricks Point St. Park, nor. California, Kenwood-R-1000, Yaesu FRT-7700 tuner w/homebrew Jfet preamp, 300 - to 400 foot end-fed wire trailed through shrubbery near campsite toward beach. My fave recording of lwbc dx from across Pacific Ocean - notice GOS 278 ident in background - snippets of 270 in there whilst I tuned around. lovely recording of 'Barcelona' and bfl Russian woman speaking - so soft voice! 1995 WRTH says 1 megawatt! - I can hear this regularly in Owens Vly, CA. on the active-antenna out in the field behind my house, as well as many other LWBC stations - see map below. S-McGreevy - 5.7 MB but high quality/hi-fi - a few minutes long in duration.



All Radio Rossii LWBC stations in Russia left the air on 09 January 2014. NONE of these are on-air anymore except Mongolia on 164 kHz... they were formerly great DX targets and propagation indicators.

**Sony ICF-SW7600GR ('barefoot' loopstick only) NDB Reception aboard Silja Line Ferry amidst Swedish Archipelago - mid-Sept. 2009**



393 kHz LSB-mode - Sony ICF-SW7600GR with only loopstick on deck of Silja Line Ferry amongst  
Swedish Archipelago - 19 Sept. 2009 at 0530 local time - Stephen McGreevy - N6NKS

392 (carrier) GDY - Godby, SWEDEN FINLAND

388\_usb\_baltic\_sea\_sweden\_sept09.wav

File Variables Pointers Help

390 kHz LSB-mode - Sony ICF-SW7600GR with only loopstick on deck of Silja Line Ferry amongst  
Swedish Archipelago - 19 Sept. 2009 at 0530 local time - Stephen McGreevy - N6NKS

388 COR Corner for Bromma, Sweden

389 (carrier) of MR - Skien, Norway

unID "H" heard in europe

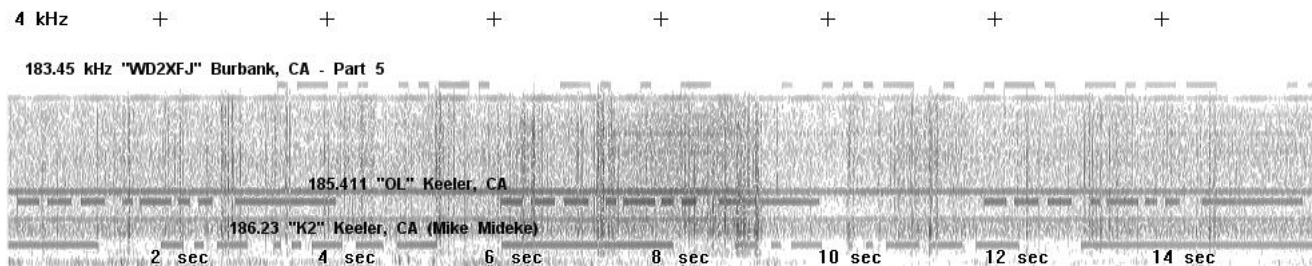
388 carrier



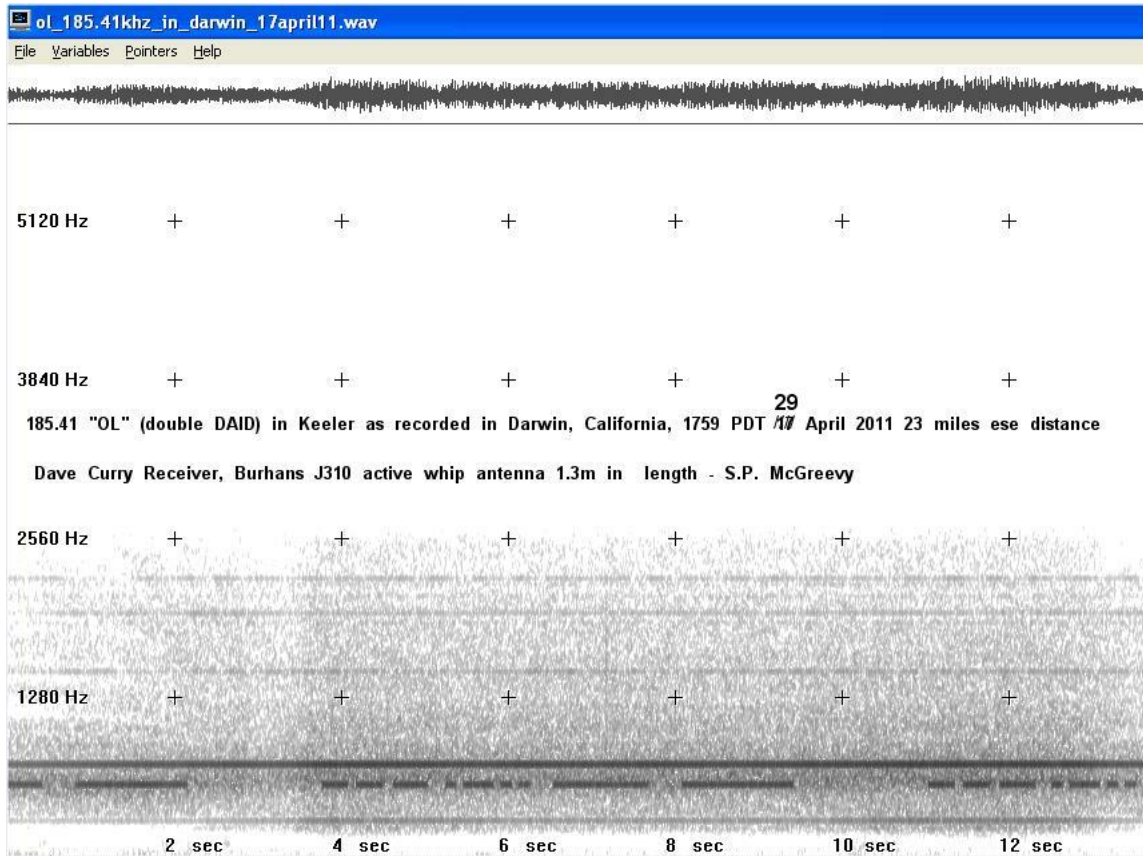
## Miscellaneous Transmitting:

(former) 185.41 LowFER "OL" Keeler, Calif. local groundwave reception 11 April 2011 in Inyo Co., Calif

Three California LOWfers - 06 August 2011 at about 2000 ut - Santa Rosa Flat, Inyo. Co., Calif. 120 cm active whip (Burhans J310 ver.)  
to Dave Curry LAFD receiver (LSB-mode)

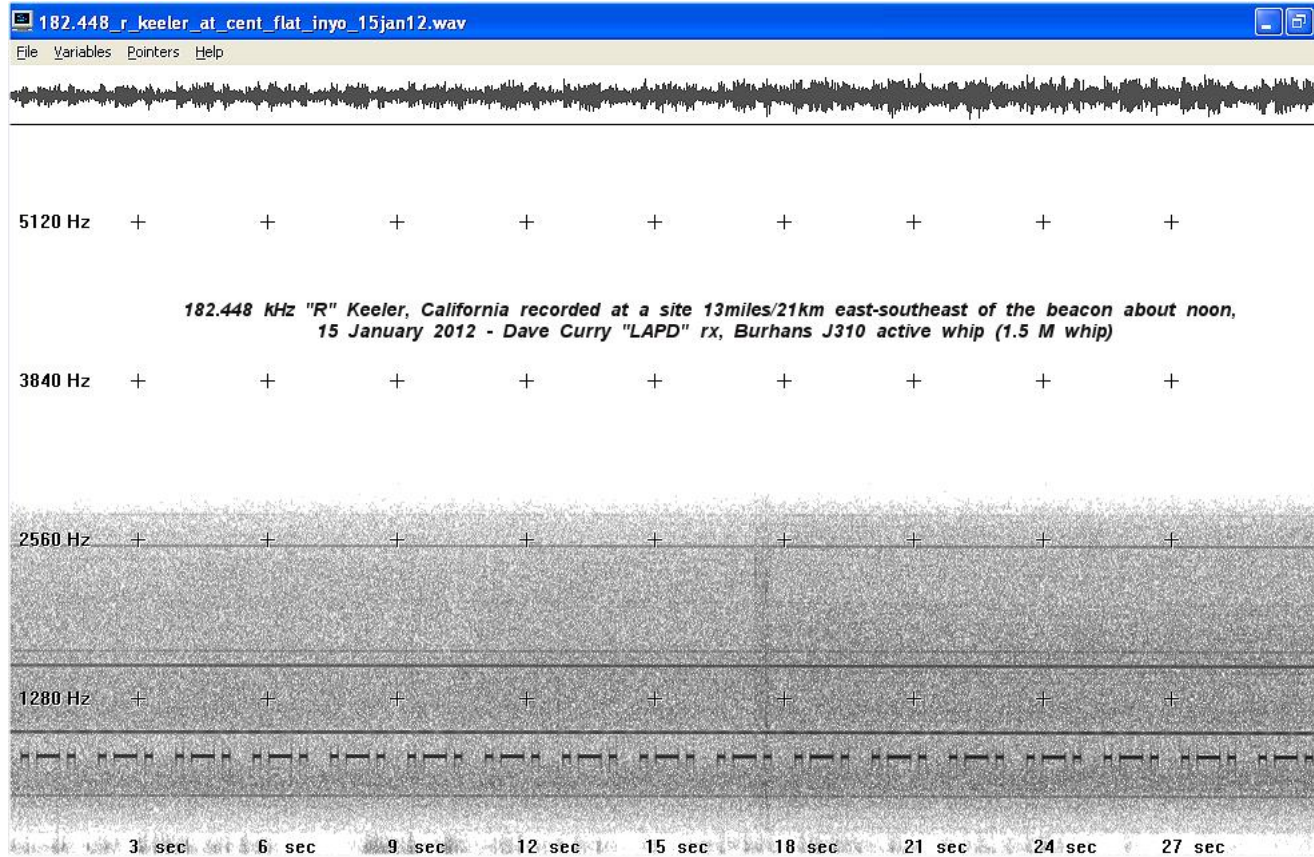


Three (about 183 to 185 kHz) CW/A1A lower beacons running on 06 August 2011 - as heard in Inyo Co., Calif. at Santa Rosa Flat, etc.



After loading-coil-system improvement.

## "R" LowFER - Keeler, Calif. - 182.448 kHz (2012 to 2018):

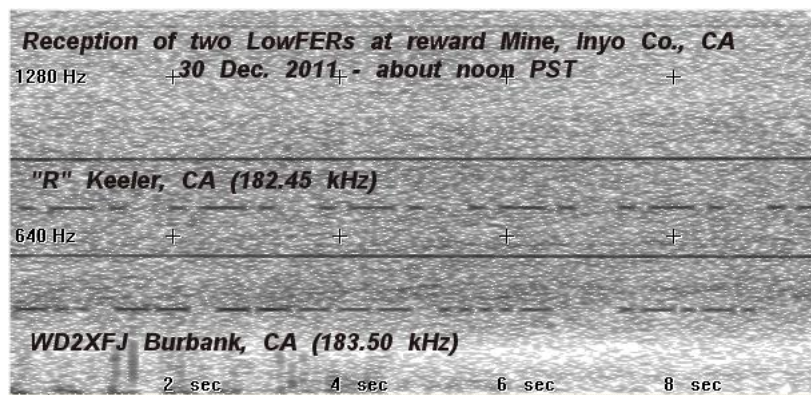


**182.448 kHz "R" lower - 1130 - 1430 UT daily winter 2012 / occ 2018!.**



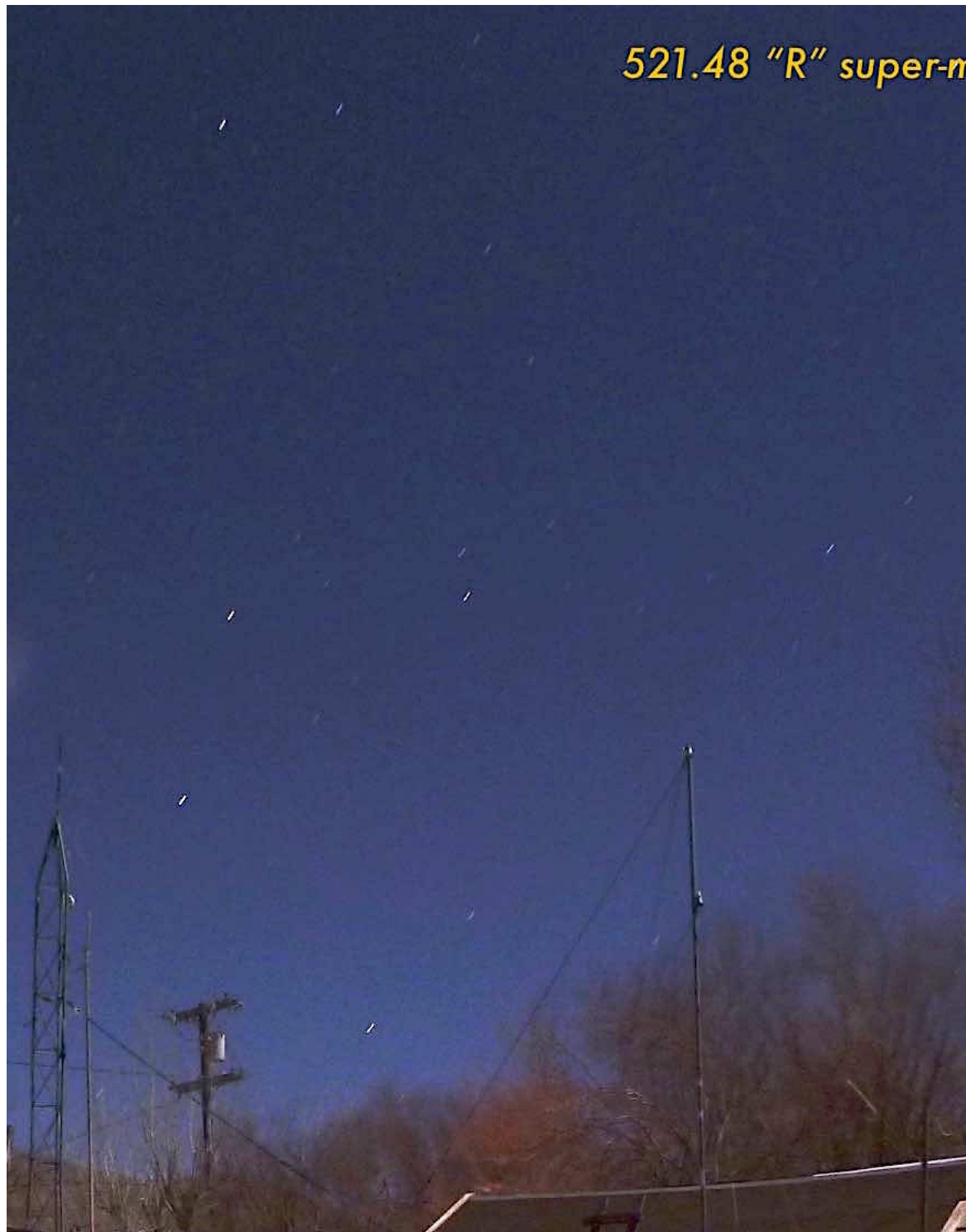


A lovely dawn in Keeler with my 160m vert. and 75m inv. L tied together for the R-beacon Lower xmitting - 2013.





**I have not been doing very much nor consistent LF-transmitting the winters of 2013-2019 except for very-brief DX tests of the R-Lowfer groundwave signal, preferring the lower Medfer/MW band - SpM).**

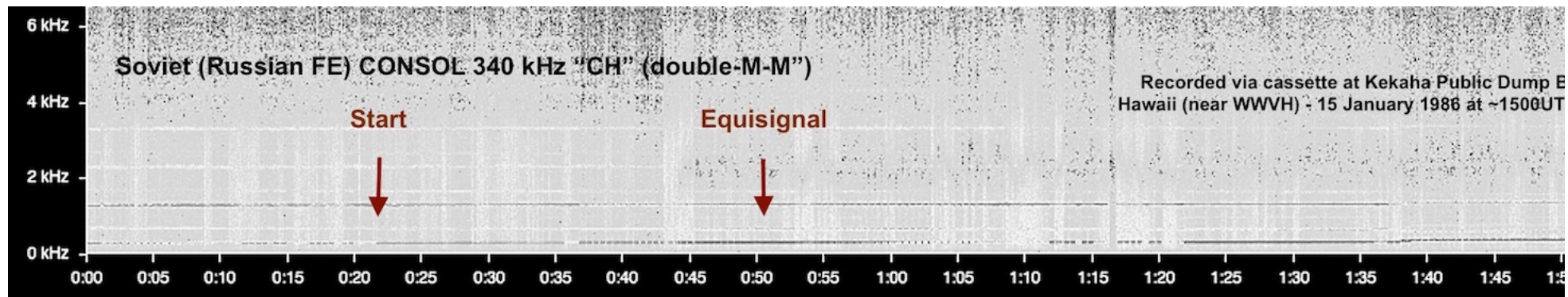




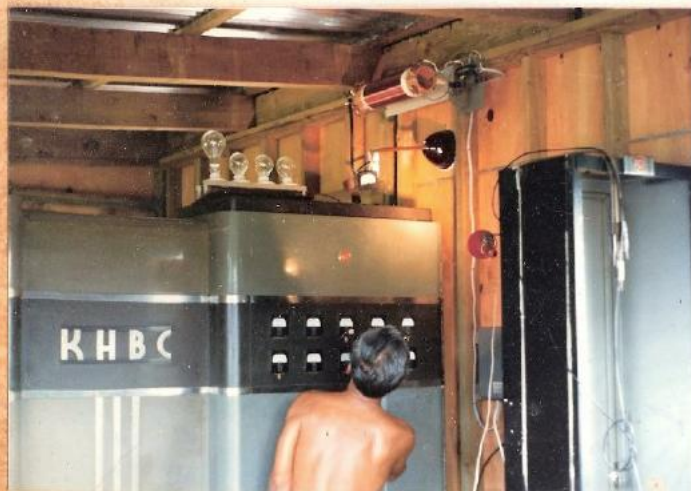
January 1986 visit to WWVH Kekaha, Kauai, Hawaii - SP McGreevy - N6NKS

Scan of four photos of the WWVH Time and Frequency-standard station on Kauai, Hawaii (to the west/northwest of Kekaha, Kauai) photographed during a visit in January 1986 by S.P. McGreevy





September 1986 Hilo, Hawaii (Hawaiian Homeland Owned) 1060 KAHU (900 watts) to 1/5 wave vertical - initial testing and on-air broadcasts - SP McGreevy - N6NKS - Sept. 1986



1060  
005  
1986  
KAHU 1060  
Hilo, Hawaii

A scan of four photos of the of the rather spartan but brand-new "studio" and transmitter shack of (in testing-phase) 1060 KAHU Hilo, Hawaii Island, photographed during my time in Hilo when I was doing a lot of DXing there on LW and MW, and was a member of the Big Island Amateur Radio Club in Hilo - a fine bunch then! I also had fun with Dean Manley, KH6B doing initial field-strength measurements of KAHU all over the area during September 1986. SpM. - just 10 miles from KAHU, Mexico City creamed their signal and even in north Hilo the 200 kW Mexican station (en La Grande Ciudad de Mexico) could be heard underneath KAHU. Ground conductivity in the region was measured via field-strength curves at (only because of poor ground-conductivity lava terrain/geology) = ~0.3 mmhos! - SpM. Additionally, KAHU employed only a 1/5 wave tall mast due to close proximity to Hilo Airport (Gnl. Lyman Field) and could only put out a bit over 900 watts, also (nominally 1 kW). [1060 KAHU Hilo recorded with Hawaiian DJ during their October 1986 testing phase - recorded at 667 Wainaku Avenue, Hilo by SP McGreevy](#)

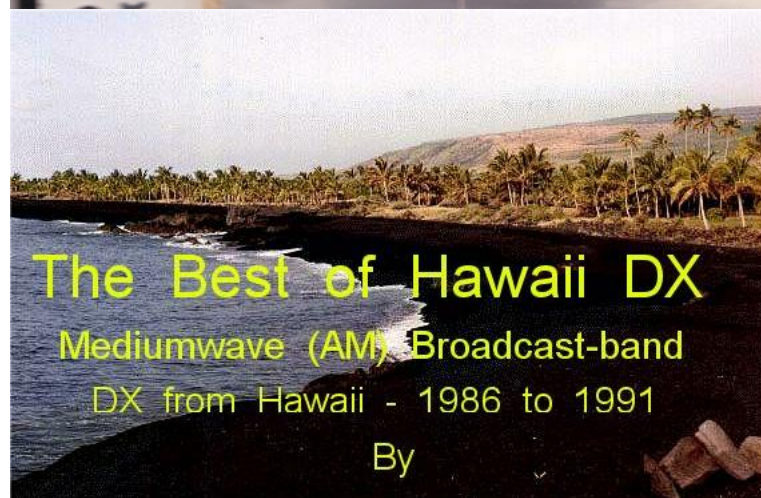


Stephen P. McGreevy - N6NKS - October 1986 - Hilo, Hawaii





## DX and LW-MW DXpeditioning in Hawaii:



Stephen P. McGreevy, N6NKS

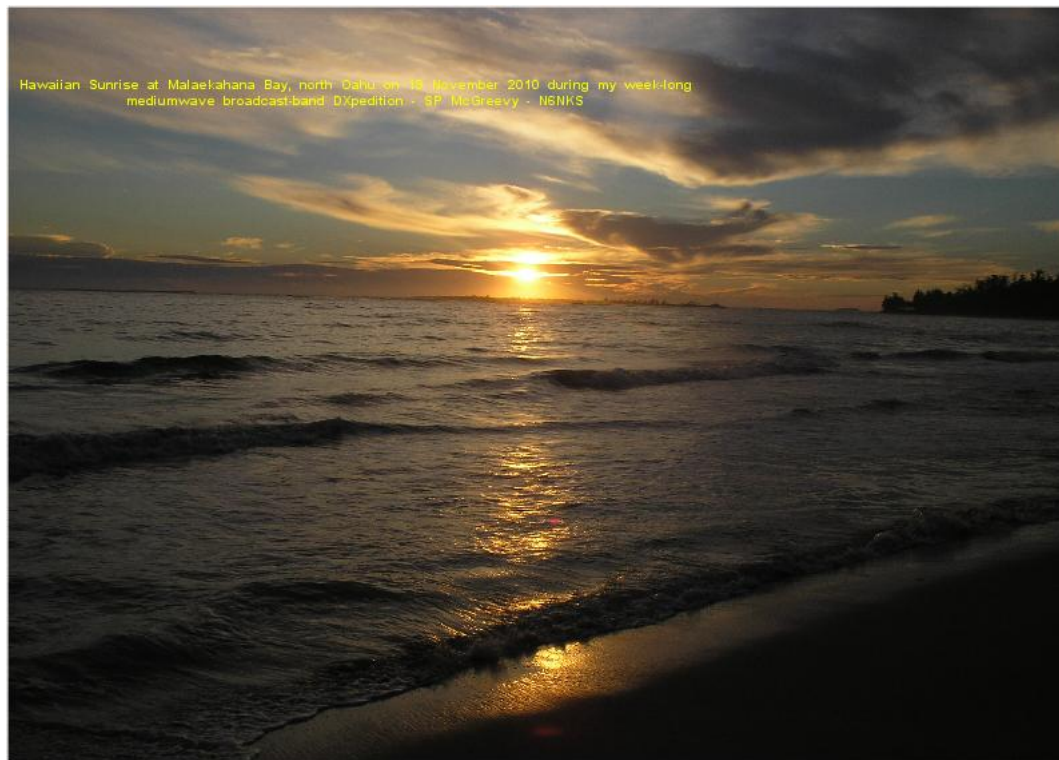


[1\) The Best of Hawaiian Mediumwave DX - 1986 to 1991 - S.P. McGreevy, N6NKS at archive.org \(Internet Archives\)](#)



[2\) Click Photo or thislink to go to Internet Archives site to listen to audio-files \(MP3\) of my latest Mediumwave/AM Broadcastband DXpedition \(15-21 November 2010\) to north-east Oahu, Hawaii!](#)  
[.\(http://www.archive.org/details/HawaiiMediumwaveDXpeditionNovember2010\).](http://www.archive.org/details/HawaiiMediumwaveDXpeditionNovember2010)

[My two Internet Archives Hawaii DX pages and the photos therein are Dedicated to Dr. Richard E. Wood - PhD, a good friend I met in person beginning in August 1986. This is a photo of Richard and his humble fruit stand in Keaau, Hawaii, September 1986 adjacent to the old Feed-Supply store building. Later he would develop a website and he would expand to two fruit stands on Hawaii Island.](#)



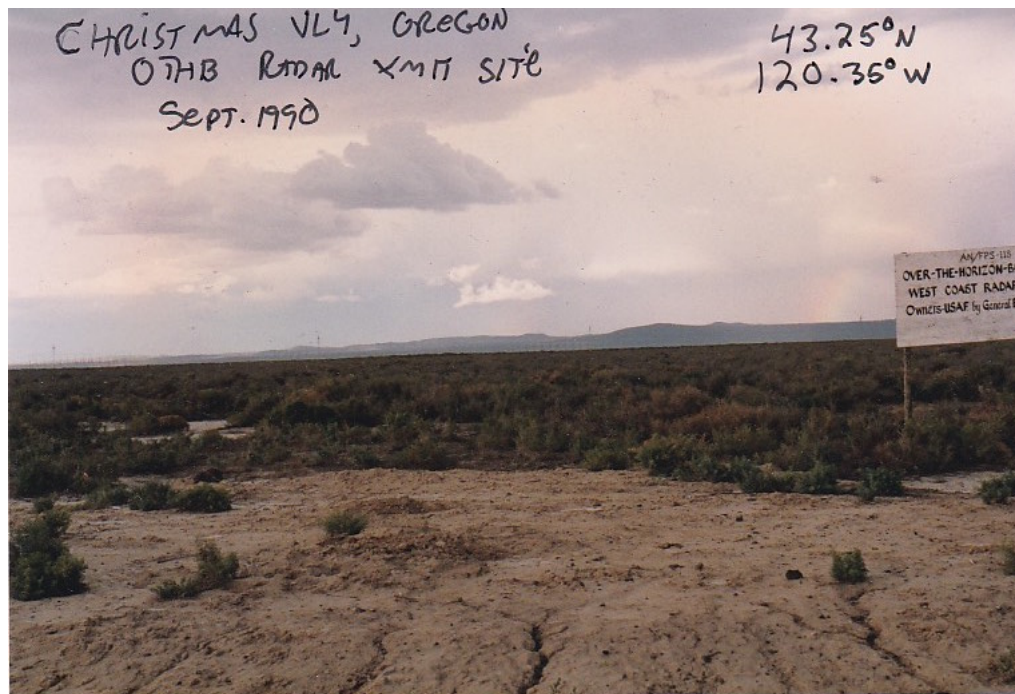
Hawaiian Sunrise at Malaekahana Bay, north Oahu on 19 November 2010 during my week-long mediumwave broadcast-band DXpedition - SP McGreevy - N6NKS

[November 2010 Oahu, Hawaii DXpedition: Another glorious Hawaiian Sunrise 19 Nov. 2010 \(on n.e. Oahu near Kahuku\) after a wonderful night of DXing the MW/AM BCB! \(click image to go to the Internet Archives page of this November 2010 Loop Antenna DXpedition\).](#)

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## Christmas Valley Oregon OTH-b-radar transmit site sept. 1990





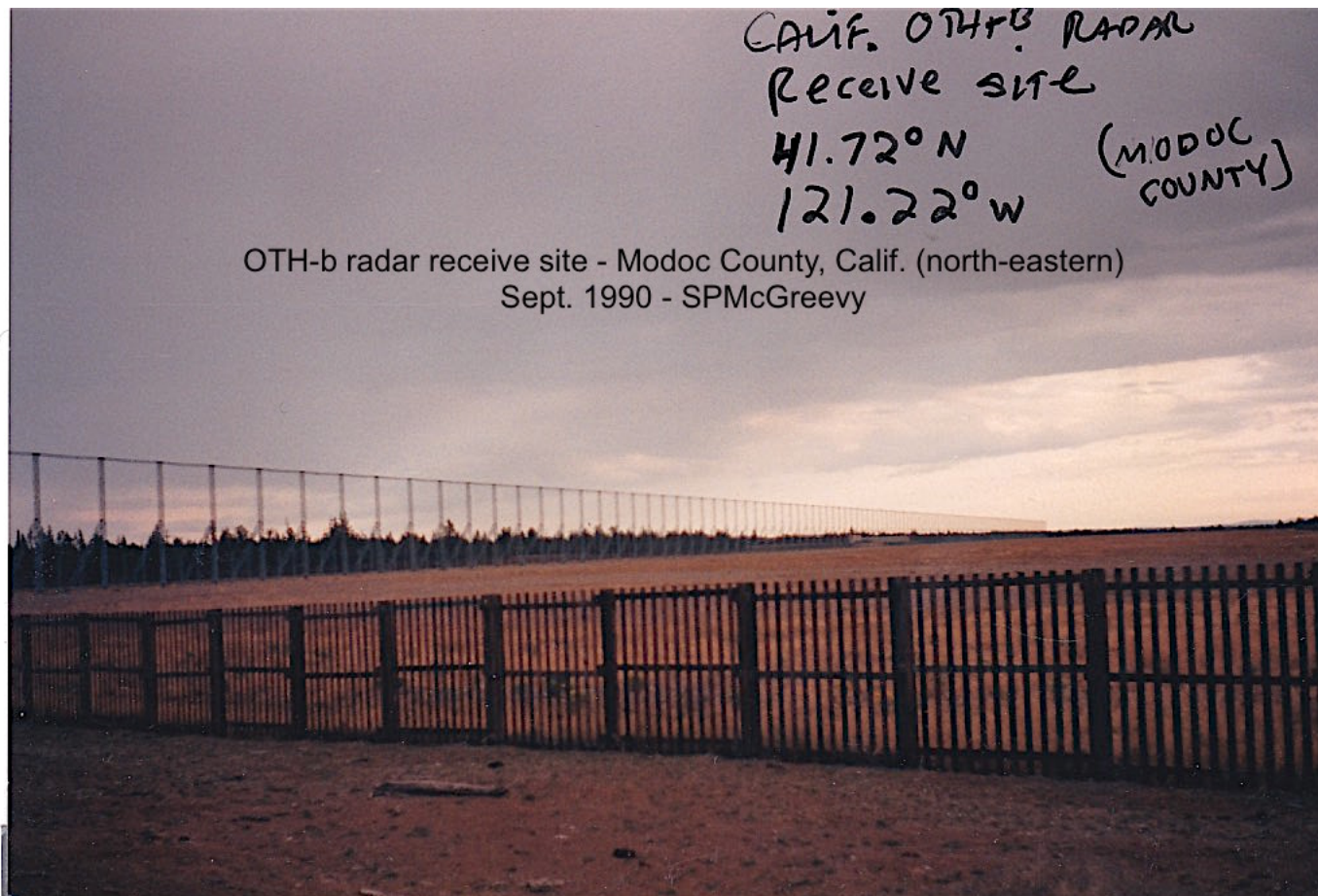
- Christmas Valley, Oregon - Sept. 1990 - HF OTH-b radar site. As soon as it was completed it became a "white elephant" due to technology-obsolence.

## Modoc County, California OTH-b-radar receive site sept. 1990

(the three former antenna sites were engulfed in a large wildfire-complex that started near Perez, CA in late August 2019 and swept north-east into the Clear Lake Reservoir area).











Ship on sea with Farallon Islands behind - from atop Firtop Hill - Marin County - sometime in the 80's - McGreevy

ship on the sea with Farallon Isl. in background - you can see out 100 miles to the horizon - photo taken from Firtop Hill in the Point Reyes Nat. Seashore in late 80's - S. McGreevy - I love photography too!

Nearly all Photos and this webpage curated by Stephen P. McGreevy. Page first completed 20 March 1999 (updated 29 August 2019). I wish you all good VLF-HF transmitter visiting and DXing!

## Natural ELF-VLF Radio & Radio-DXing Website Top Page

Stephen P. McGreevy NDB Gallery Page Count Beginning on 08 April 2010 at 1400z:

DOMAIN	VISITS
TODAY:	9
YESTERDAY:	7
TOTAL:	153278
HITS	
TODAY:	10
YESTERDAY:	10
TOTAL:	184877
PAGE	VISITS
TODAY:	9
YESTERDAY:	6
TOTAL:	80705
HITS	
TODAY:	10
YESTERDAY:	9
TOTAL:	90699

